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ORIGINAL ARTICLES.

NON-VALVULAR HEART MURMURS.*

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AN enumeration is here made of certain abnormal sounds produced by cardiac action. These peculiar sounds are frequently met with. In a long series of heart cases they will constitute a small proportion. They are of very great importance, and their importance lies in the fact that their characteristics resemble somewhat the murmurs that are present in cases where there is or has been inflammatory valvular disease of the heart, with all of its subsequent changes. It is necessary to recollect that they but resemble these murmurs, and have no connection with them. Merely determining their presence is but one step in the diagnosis. It is more important to interpret their significance and to differentiate them from the sounds that are the result of changed conditions in the heart from inflammatory action. They bear but little relation to therapeutics, although the diseases producing certain of the conditions may be treated with benefit. To the patient their importance consists in the prognosis which may be given in the individual case. It is a well-recognized fact that the state of the nervous system—hyperactivity or depression, showing itself in neurasthenic conditions—has a controlling influence over the action of the heart. Anxiety and constant worry about bodily conditions may have a depressing influence upon the health. Giving undue importance to the presence of abnormal cardiac sounds may affect the prognosis in the case, and in itself cause harmful results.

The reason that these peculiar sounds may be misinterpreted, after their due recognition, is, that in the study of heart cases only one method of physical examination is very frequently used. Upon the findings of that method the diagnosis is made. The other means of examination are either not used at all or are given a secondary place. The notes of recorded histories of heart cases that are frequently met with in studying the literature of cardiac disease, bear strong testimony to this fact. It is common in the examination of the case that the ear or the stethoscope is at once applied to the area of the apex. Perhaps a loud, roaring sound is heard there, transmitted or not. Very little importance is given to the basic sounds, because something definite and striking has been found at the apex. This is at once called mitral regurgitation, and the patient is put down as a chronic organic heart case. In a large number of cases such a conclusion would be absolutely incorrect. I have made from my series of heart examinations in the last three years a list of all cases in which there was an apical murmur, systolic. Then I have ascertained the diagnosis in each case. Of this number, thirty-six per cent. were cases in which there was no inflammatory valvular disease. In other words, sixty-four per cent. were cases of mitral regurgitation.

The interpretation of the sound should come after its recognition, and this can be done only by employing all of the methods of physical examination of the heart. A systematic course of examination should be pursued. Were I to name these methods in order of importance—*i. e.*, giving precedence to those by which we find the most of the condition of the organ—I would say that first came palpation, next inspection, next the associated percussion and mensuration, and then auscultation. The last tells of a condition. The others tell what that condition means, and they with the pulse will frequently make the diagnosis.

If our illustrative case had been one of mitral regurgitation, the entire diagnosis would have depended upon right ventricular hypertrophy. Muscular change in the heart can always be diagnosed by the first methods of examination, whether it be from inflammation of its own structures, or from disease in organs far removed. These methods would have discovered, in this case, *five* signs, all resulting from and all pointing to a certain condition, giving positive testimony that there was no change in the left ventricle. Upon auscultation *three* more signs (not including the apical murmur) would have been found, making with the pulse *nine* in all, the murmur giving merely additional testimony, but its presence alone would never mean organic valvular affection. As shown by the percentages given above, auscultation alone would have placed in the same category cases resulting from endocardial change, and cases in which no such grave disease had been present.

The study of the sounds here presented has been upon the clinical examination of cases and upon

* Read before the Medical Society of the County of Kings, March 17, 1891, and reported in the Journal of the Society.

observations of the cardiac area in post-mortem examinations. The combination of these two has resulted in a series of theories, some of which are still theoretical, while others have been proved in the dead-house.

I. THE POST-MORTEM EXAMINATIONS.

It should here be noted that in the examination of heart cases there is only one important area of cardiac dullness. This is the superficial area. It is in shape an irregular triangle, about two inches in each direction, extending from the apex to the left para-sternal line, up the left para-sternal line to the fourth cartilage, and then curving out from that point to the apex. The deep area of dullness, for the finding of which so many rules are given in the books, need never be ascertained in heart examinations. It is of no value.

The first point in making a series of post-mortem examinations (for cardiac conditions) was the appearance of the external surface of the pericardium, *in relation merely to the aspect of its extent.* Two conditions were noted: The membrane *smooth* and the membrane *wrinkled.* The extent of this area in the dead body, in some cases, was similar to that in the living subject. In other cases it had no particular shape and no particular dimensions. The ordinary expansion of the chest wall upon opening the thorax is one factor in the production of the change. But such change would affect merely the size. Judging from the continued results obtained, the condition of the normal area (such as is found upon clinical examination, is seldom changed. Should there be no alteration in adjacent organs, no adhesions, or adhesions equal in amount on both sides, the pericardial surface will be *smooth.* It will be *wrinkled* either by pressure or by traction. The *pressure* may come from an excess of blood in the middle and lower right lobes, an enlarged liver, a distended stomach, pleuritic adhesions on the right side, emphysema of the anterior margin of the lungs. The *traction* may come from a distended left lung, pleuritic and pericardial adhesions, excessive amount of connective tissue in any part. It has been of interest to observe that enlargement of the left abdominal organs has produced no change; also that excess of blood in the lower left lung tends to draw that organ away from the heart and not toward it, as on the right side. The presence of the liver on the right side giving greater space for movement on the left accounts for this. Next the condition of internal pericardium was noted; then the cardiac muscle, searching for a "white patch." This was most generally found on the anterior portion of the right ventricle and not so frequently over the conus. The condition of the tissue about the heart is examined, and then the position of the pulmonary artery. In some cases, as Gray says, the vessel went obliquely upward, backward, and to the left, but in others it was found to go straight up and to lie very close to the aorta. Its size must be ascertained, and also any peculiarity at the point of division. Pleuritic adhesions of all kinds and emphysematous patches must be searched for.

II. THE CLINICAL EXAMINATION.

Five elements have entered into the study of these sounds:

1. The time.
2. The position.
3. The character.
4. The influence of the rest and action.
5. The individuality.

The principal rules for the interpretation of the sounds have been two in number:

1. The presence or absence of muscular hypertrophy.
2. The individuality of the sound.

This latter is most important. It bears the same relation to cardiac disease as the individuality of the pleuritic friction sound bears to pulmonary disease. In addition to the rubbing friction sound is heard far away, remote but distinct, the vesicular murmur. So in these cases, with one exception, the murmurs bear no relation to the cardiac sounds, first and second. They are heard in addition to them, not taking their place.

The cases have been in hospital, dispensary, and private practice. They represent, therefore, all classes of society.

In this paper the terms murmur and sound are used interchangeably. Dr. Gee has defined a murmur as a sound produced by the flow of fluid, liquid or gaseous, along a tube. All murmurs are therefore sounds. Although the reverse statement is not true, yet there are many sounds that have a murmurish character. Certain of these peculiar cardiac conditions are typical murmurs, as they are produced by a fluid vein. Others have merely the elements of sound with varying degrees of pitch and intensity.

The murmur of anæmia is here merely mentioned. It does not wholly belong to this category, as there is often dilatation of the ventricles, but still in some cases it is non-valvular.

A term has been used to embrace all these murmurs, which has certain exceptions to be noted.

Mention will be made without description of sounds about the heart, resulting from well-marked disease in other organs.

With these explanations, therefore, there are certain abnormal sounds produced by cardiac action. Nine of these are here considered.

1. OF ANÆMIA.

Reference is made to a paper* read in this place some time since on an analysis of one hundred cases of the above disease, which contained a de-

*An Analysis of One Hundred Cases of Anæmia, by Henry Conkling, M. D., read before the Kings County Medical Society, December, 1888; published in *The Brooklyn Medical Journal*, March, 1889.

scription of the murmurs found in thirty-one cases of that series, with a discussion as to their causation. The following words are quoted here: "A soft blowing murmur; in point of time systolic; never taking the place of the valvular sounds; most frequently a continuous murmur, occupying the whole of cardiac action, intervals between the cardiac sounds and the murmur being rare; made more intense by exertion; not always disappearing when in the recumbent position.

2. OF RAPID ACTION.

Occasionally during the first part of an examination of the heart, where the action is rapid, a faint, left apical, systolic murmur may be heard. During the latter part of the examination this murmur may disappear. The general nervousness of the patient is always very apparent. Temporary nervous activity causes the murmur. Upon holding the breath it becomes progressively fainter and then disappears. It is not heard in the recumbent position. Upon having the patients violently move the arms, and so increasing cardiac action, it was noted that the *pitch of the murmur was raised, but that the intensity was not changed*, contrary to usual rules. In no case was there a history of nicotine poisoning. Only once was the murmur heard in a child. The highest pulse was 150; the lowest 112. In seeking for the ætiology of this murmur, the question arises, was there reduplication of the first sound, the mitral and tricuspid valves closing at different times? This was excluded, as much reduplication is generally considered as leading to a præsystolic sound. The explanation may perhaps be found in recalling the formation of the mitral valves. Their edges are slightly uneven, but so adapted to one another that coaptation is perfect. In this series of post-mortems the tube test has been used to note the competency of the mitral valves, a long glass tube three-quarters of an inch in diameter being passed through the aorta into the left ventricular cavity, below and behind the anterior mitral valve. The valves were then blown up, similar to being floated up by the blood in the active heart. It is not always possible, when imitating rapid action, to bring about perfect closure on account of the uneven edges. It is not improbable, therefore that, in rapid action, in certain cases, where the valves are coming frequently together, time is not allowed for perfect closure, causing a mitral regurgitation, there being of course no incompetency. The fact, already mentioned, that exertion in the cases examined raised the pitch but did not affect the intensity, strengthens this view.

In studying these cases another question arose—Why is not such a murmur heard in the rapid heart of disease—for instance commencing febrile affections? After examining a number of such hearts, two answers can be given:

1. The recumbent position.

2. Because inflammatory conditions, where the heart muscle at the commencement of the disease is normal, there is present a pulse, the description of which may be given in three words which have become classical: full, hard, bounding. The activity of the arteries is increased. Their greater contracting power carries away from the heart with perfect ease the extra blood thrown into them. In the form of rapid action first described these arterial conditions are absent and a murmur results.

3. OF DISTURBANCES OF RHYTHM.

In a few cases murmurs were heard in patients suffering from severe stomachic disorders, the urinary organs being normal. As the conditions improved the murmurs disappeared. In one case it was a typical præsystolic sound occurring toward the end of diastole.

The ætiology of the sounds in these cases is very obscure. I have thought that the fact that motor fibers from the pneumogastric went to both heart and stomach might be an explanation.

4. OF THE ROUGHENED AORTA.

This is almost invariably a double murmur, having a late systolic and an early diastolic element. Sometimes the systolic portion may be heard in the neck; the diastolic portion never. The second aortic sound is clear and distinct, or weak, depending on the condition of the muscular fiber. The murmur is high pitched, harsh, blowing, distinct in varying degrees. In one case it was heard at the apex and up and down the sternum. In the majority of the others it was limited to the aortic area. In many of the cases there was a syphilitic history, which would account for weakening of the musclar tissue. The roughening which causes the murmur in this peculiar state may be said to be atheroma, using the word only in the most strict sense of its meaning in the original, and not discussing in detail causations. The growth must be in excess of the basic foundation, which is its commencement and beyond which it sometimes does not go. In other words, *elevation must be present* or no murmur results, as both clinical examinations and post-mortem observations have shown. Atheromatous changes without elevation were found in cases where the heart was examined before death and no murmur discovered. The appearances found were: A single patch, numerous small patches arranged in a circle, with staining of the vessel between them, a long line, and well-marked points. The condition being an early one, need not be associated with dilated aorta, and marked constriction is not always present when there is syphilis. Hypertrophy of the heart never exists in these cases. While this is the most grave of the conditions presented here, it is the simplest in its nature and illustrates perfectly the usual causation of mur-

murs. From the study of these cases it seems apparent that this atheromatous patch must be in the aorta, away from and not in the immediate vicinity of the aortic valves, and the reasons for so saying are two: 1. Theoretically. 2. The result of a post-mortem examination.

1. THE THEORY.

Many years ago Chevau stated that in vulvular disease of the heart the murmurs found were due to a fluid vein, by which eddies were formed. He defined a fluid vein as a jet of fluid flowing swiftly enough out of a narrowed orifice into a wider space. It is of great service in the study of pulmonary diseases to widen the definition and apply his principles to columns of air. For our purposes here a simple experiment was performed. One end of a rubber tube, sixteen inches long and one-half inch in diameter, was placed in the mouth, and a current of air blown through. There was heard a low pitched sound. Pressure was made on the tube at some part of its length, causing a narrowing of the caliber. The pitch of the air current was immediately raised, a change from the first or normal sound. There had resulted a fluid vein. The mouth was the left ventricle; the tube was the aorta; the constriction was the narrowed orifice, and the wider space, *i. e.*, wider than the constriction, was the tube beyond. But it was found that the position of the constriction had a great influence on the sound produced. If the lips and teeth produced it, no change occurred in the pitch, because no fluid vein had been produced, there resulting merely a smaller tube at the commencement, which lessened the amount of the air current but offered no interruption to its progress. It was necessary, therefore, for the constriction to be away from the mouth.

2. THE POST-MORTEM.

In December, 1890, a woman, aged fifty-six years, was admitted to St. Peter's Hospital with abdominal ascites. The examination of the heart revealed no change except that the sounds were very clear, even forcible. Its action seemed to be that of a heart working very energetically in a cramped position, due to pressure from below. Advanced hepatic cirrhosis caused the patient's death. The post-mortem examination showed that a mistake had been made as to the true condition of the heart. There was great thickening of the aortic valves and their attachment, explaining the accentuated sound. Near the heart the aorta was smooth; well down in the vessel it was roughened. But between the middle and right cusps there was an atheromatous elevation, firm, sold, intact. When the valves were open, its summit was on a level with the orifice, between two of the cusps. When they were shut, its base was close to the circular valvular attachment, being of necessity placed low down at the bottom of the sulcus which is immediately behind the valves. No murmur had been heard in this case, because, when the ventricle contracted, no obstruction had been offered to the size of the blood current, and because, when the recoil came, so close was the growth to the valves that the blood could not eddy around it. In the roughened aorta, therefore, the growth must be away from the valves, near enough, however, to receive the direct force of the blood current. In this condition there exist the aorta on one side, the constriction (the growth), and the wider space (the aorta beyond). This is a typical fluid vein. The systolic portion of the murmur comes from left ventricular contraction; the diastolic portion comes from the aortic recoil. To this condition in my notebook I have given the name of *extra-valvular vascular*—outside of the valves in the great vessel.

5. OF THE DILATED PULMONARY ARTERY.

The following is an illustrative case: A systolic murmur heard in the region of the pulmonary valves, at the left para-sternal line (fifth and sixth cartilages) at the apex and faintly in the back, being of high pitch at all points except the apex, where it was of low pitch, in a man forty-four years of age, with great muscular development and a chest expansion of five and one-half inches, who since the age of nineteen had been accustomed to violent gymnasium exercises, such as demanded great exertion, as swinging upon the parallel bars with the body nearly horizontal with heavy weights attached to the feet, and who was accustomed at the time of the examination to run long distances daily. There was no increase in the size of the heart. The sounds were all present, but not accentuated. The murmur was regarded as coming from dilation of the pulmonary artery, for eight reasons. 1. It was late systolic. 2. Its maximum intensity was at the base of the heart. 3. There was no accentuation of the pulmonary second sound. 4. Its duration was short. 5. Its cessation was quick. 6. It had the element of directness (as though produced in a small space). 7. The important history. 8. The absence of all symptoms. This man was an athlete who daily during his exercise had produced an overdistention of the circulation in the lungs, a damming back upon the plumonary artery and the right heart. Muscular strength was greater than vascular strength, and the vessels yielded. This murmur bears no relation to one coming from the dilatation of the pulmonary arterial branches. It is found only in athletes, runners, oarsmen, etc., because they demand instantly and for a relatively short continuance increased exertion. In the intervals there is no extra demand. In hundreds of examinations of the heart in laboring men, especially longshoremen and porters, I found no dilatation of the pulmonary artery, because their work is more moderate, does not tax the right

heart as much, is continued longer *continuously*, and produces from its nature different chronic changes.

In other cases of the dilated plumonary artery pulsation of the vessel was found upon examination. In the first part of the paper attention was called to the position of the pulmonary artery, and its relation to the aorta. In these cases it is possible that eddies may be found in the blood current from too close contact of the vessels during their movement. This would explain at once the murmur sometimes heard in the back.

6. OF THE PULMONARY ARTERIAL BRANCHES.

The following cases illustrate the sound: There was heard a soft, breezy, systolic murmur over the greater part of the cardiac area and upon the mammary regions on both sides. It did not come with every cardiac beat, but still was regular in its occurrence. In the recumbent position it became fainter. The person examined was a locomotive fireman, who was constantly "firing the engine." Similar sounds were found in longshoremen, laborers and porters. Their work requires frequent, repeated, long inspirations, and also holding the breath. Consequently distention of the alveoli occur. This is attended by a temporary stagnation of blood, with neither diminution nor increase in amount, in the pulmonary arterial branches. A deep *expiration* occurs, and the sudden release of the blood in the vessels causes irregular pulsations, giving rise to the sound. The constancy of the work probably causes some organic change which becomes chronic; in other words a habit is formed; by this habit, what at first was only heard at times, becomes chronically present.

7. OF PERICARDIAL FRICTION.

Ten cases are reported. The murmur is generally, but not always, limited; heard at the right apex, left apex, or anywhere where the right ventricle comes against the chest wall. It is grating, harsh, hard, and may be systolic or diastolic; if diastolic, it comes from the rebound of the heart.

Pericardial friction sound has been described for many years. The impingement of the conus arteriosus against the chest wall has been said to be the cause. My own experience has been almost invariably to limit the sound produced by the conus arteriosus to cases of organic valvular disease, finding a friction sound in addition to the murmurs or murmur, and upon post-mortem examination finding the so-called "white patch" upon the conus. But in this series of post-mortems the white patch has been found more commonly over the lower portion of the right ventricle. A friction sound could of course result from it in that position.

To this view are here added two observations. 1. The recorded notes of these cases say that there was found occasionally a general systolic murmur, which in some cases had a soft, wavy character. If this be so, it is possible that the pericardium was *wrinkled*, due to the causes already mentioned, and by the pulsations of the heart these folds were being constantly brought in contact, causing a sound. In a case but recently examined of enlarged livery there was heard an apical murmur, which was non-valvular. Hepatic enlargement has been mentioned as one of the causes of *wrinkling of the pericardium*. This case was a perfect illustration of such a condition. All other causes could be excluded. 2. Sometimes a systolic murmur is heard at the apex in dying patients. In a post-mortem made recently, the results of which are in keeping with others, acute pericarditis was found with bands of lymph, well formed, running from heart to pericardium. A murmur was heard in this case before death. It is not impossible that the movement of such bands caused the sound.

8. OF EMPHYSEMA.

In no case of general emphysema was a non-valvular murmur heard, but there were a few cases in which the area of cardiac dullness was diminished, where a systolic murmur was heard, generally a little above the apex. It is probably due to an emphysematous patch along the anterior margin of the lungs. Why this localized emphysema should be produced is not always apparent. It may perhaps belong to the class which Strümpell has demonstrated as "vicarious emphysema." It is interesting to observe that here the condition is also one of a fluid vein. There exist distended alveoli, slow and imperfect emptying of air (with a tendency for some to remain), upheaving of the heart, driving the air out in regular and successive beats; all of which make the cavity, the orifice, and the wider space beyond, *i. e.*, the steadily increasing air tubes. The sound disappears in the recumbent position and *immediately upon deep inspiration and holding the breath*. Holding the breath without deep inspiration will cause the sound to become progressively fainter before disappearing. In a few cases an emphysematous crackle from the beating of the heart against the stretched pulmonary tissue was heard. A few of this last variety were in cases of pulmonary tuberculosis.

9. OF THE PLEURITIC CLICK.

In only one case was this heard at or near the apex. It is a friction sound in the pleura caused by the cardiac pulsation. In this particular case the pleurisy near the heart was the inner end of a long band of dry pleurisy, the outer end of which was at the posterior border of the axillary space.

But far more important than this is another sound which may be pleuritic in character. This is the general systolic murmur. This has already been mentioned and will again be referred to. In studying it clinically, the question arises, could it

be pleuritic? With this causation, three conditions would be necessary:

1. Thickened or adherent pleura.
2. A space for movement.
3. A moving body.

Post-mortem observations, upon the positions of the lobes (more especially the right) and the condition of the pleura in the sulci between them, found, with certain anatomical facts, the three necessary conditions, showing that the theory might exist clinically. Adhesions in the sulci, not causing union between the lobes, are common without any great diseased conditions. They may be at the bottom, in the center, or a simple band at the top going from side to side between the lobes. The middle and lower right lobes were frequently thus found. If the adhesions be at the inner end of the sulcus, cardiac or vascular pulsation may cause a murmurish sound by movement of the bands.

There were found in a few cases of cardiac irritability, associated with deficient excretion of urea, abnormal sounds. Vascular murmurs are very common in pulmonary tuberculosis, either from destruction of lung tissue exposing the pulmonary artery, or as pointed out by Dr. Douglas Powell, from twists in the aorta, due to the development of fibroid tissue. These sounds are not permanent, however, coming and going with the progress of the disease. A few cases were examined where changed conditions in some part of the boundaries of the thoracic cavity produced abnormal sounds, the location of which depended upon the portion affected, and the result upon the position of the internal parts.

In reviewing these sounds attention is called to the *general systolic diastolic murmur*. By that I mean a sound heard all over the cardiac area, and often beyond the limit of the space over the surrounding pulmonary regions. The murmur is frequently discovered by accident. The person being examined gives no evidence of cardiac disease. The first means of examination show there is no muscular change. But the murmurish sound is there. What may be its cause? In certain cases it can be definitely stated. In others it is difficult to find. Each case must be studied by itself. A selection may be made by further analyzing the nine sounds already described. The murmur may be from:

1. Dilatation of the pulmonary artery.
2. Dilatation of the pulmonary arterial branches.
3. Wrinkling of the pericardium.
4. Emphysema.
5. Adhesions in the sulci.

The diagnoses of these sounds are made by what is found and by what is not found. The individuality of the sounds must always be recollected. The sphygmograph gives most certain and positive results; for, while it will not tell of the nature of the condition, it will tell what the condition is not. It is of the greatest value in the roughened aorta, where double aortic disease is simulated, for the needle shows that there is neither valvular stenosis nor regurgitation, and the sphygmograph never fails to diagnose aortic regurgitation, alone or with other lesion, always giving the typical tracing belonging to the pulse of "unfilled arteries."

The therapeutics, when treatment is necessary, consist in giving rest where there has been strain; improving nutrition and breaking up adhesions by the systematic use of oxygen. The roughened aorta and the conditions associated with it may be treated by the iodide of potash. A combination of ergot and the iodide gave most satisfactory results in many of these cases.

In conclusion, the methods followed in this series of heart examinations are again emphasized: To recollect that *auscultation* must be given a secondary place; that from *inspection* may be learned the shape and movements of the cardiac area, the recession and advancement of the apex beat, the impulse of ventricle and auricle; that *palpation* shows the strength, rapidity, and extent of the impulse, diastolic movements, abnormal pulsations, and thrills; that *percussion and mensuration* show the area of dullness; that increase of dullness in the direction of the long axis of the heart means hypertrophy of the left ventricle and points to aortic disease; that increase of dullness transversely means right ventricular hypertrophy and points to mitral disease.

By this method we anticipate auscultation, and by so doing will place in our note-books two classes of heart cases, when there are murmurs: on the one side will be those resulting from inflammatory valvular disease, with all its subsequent changes; on the other, those presenting conditions similar to what has been described to-night, the most important of which is the extra-valvular vascular.

PHYSICAL EDUCATION.*

BY DR. EDWARD HITCHCOCK, DIRECTOR AMHERST COLLEGE GYMNASIUM.

ALLOW a few words this afternoon upon the training of the whole individual, in our system of education. I mean the total man and woman. It certainly is conceded by all that we are made of body, soul and spirit, three parts, and the plea I would make is, that all these parts be attended to, no one part more unduly than another. This statement is older than we are, but at the same time old truths need to be re-enforced and started afresh. The old idea, as many of us remember, is, that the scholar must be a lean, pale, lank fellow, rather dignified, pretty solemn, very little abdomen, but a good deal of head. Now, I

* Delivered at University Convocation, Albany, N. Y.

leave it to this audience to decide whether these are the characteristics we want to-day. We do want, it is true, as much, perhaps more *training* of the head and heart, but we want more of the physical. Every advance in science, every bit of talk, every bit of discipline that we have gained shows that we must harmonize these three elements of our nature. A big over-developed physique is not our model for a man; the lean, puny fellow is not our pattern. We want the all-round man, the fire, the boiler and the engine. The engine is well enough, but what is it good for without steam? Steam is all right, but what if we haven't the fire to make the steam? We want the rightly equalized three parts as the good Lord intended there should be. Look at Mr. Beecher. He had a good physique, but he was not less of a spiritual man because he had this physique.

We have seen in yesterday's paper that Superintendent Jasper, of New York City, is going to try physical education as a department in five of his city schools. This seems a step in the right direction. And President Ballantine, in his inaugural address at Oberlin College a few days ago, in outlining his proposed methods, spoke of athletics as one of them, and will you believe it, he spoke of athletics first? Is not this little fact symptomatic of the groaning of the world for health and vigor of body? Do we not want a body developed and trained before we put much intellectual furniture into it? "How be it that was not first which is spiritual, but that which is natural."

We have found at Amherst College that the physical man wants proper attention, and so we provide a gymnasium, and, as its donor, Mr. C. M. Pratt, of Brooklyn, thought of calling it a health building. And in this building for the cold and unpropitious weather of the year, we require regular physical exercise in the same proportion as we require the literary and scientific exercise, in their appropriate places, of the intellect. And the point seems settled that physical exercise, rightly and judiciously handled, can be required of the student as profitably as can any other college work. This idea should reach down to the common school. A mistake, it is true, will be made if the public schools should try to do as much in the line of competitive sports as college students do, but they may open in that direction.

You ask about systems. I don't believe we have an American system of gymnastics. We are not wrought up to this yet. We are working in that direction. We want something that all primary and preparatory schools can use, and that rather in distinction from the college, and that, partly, from the difference in age of the students. There are several different skeleton plans now. The Boston people are all alive to the so-called Swedish system. And it does seem a good thing to give this a fair trial, for it is well worked out on paper and has met with success in the old world. And a benediction is due to Mrs. Hemenway for her generous gifts to make this subject more familiar than it is. The dumb bell, clubs and free-hand class drill is stronger than it ever was before, and has come to stay among the colleges and older schools. And yet this, like most teaching, depends greatly upon the enimus, power and skill of the teachers, upon his or her individuality. They can spoil a system or a method if they have a mind to, or have not a heart or head in it.

Another thing you are asked to consider. We have the medical profession, and there is to be another one before long. It is not to be the doctor or surgeon who patches us up when we are sick, but to be of him who will help us to take care of ourselves and try to keep us in health of body and mind. The physician takes us when we are tumbling to pieces and tries to stick us together again. The new profession will not displace the old one, but give better bodies to be patched up and stuck together. But what has this profession to do with our common schools? Why, that we need this supervision and advice in all educational institutions, public, private, just as much as we need boards of examiners for the public health, and all the more in our schools, because they are compulsory. Every scholar should have a physical examination and measurements within limits. Many an average child or its parents do not know whether it is near or far sighted, defective in hearing in one or both ears, or has some muscular or nervous defect. The examiner could often find out whether a child was weighted with a physical defect, or under development, which would account for his being a so-called stupid, naughty or careless child. A pair of glasses has often raised the grade of a scholar fifteen per cent. In other words, the science of anthropometry is coming to reach into our common schools. The brain power develops alongside of and proportionately with a will power over the muscles. The boy or girl active and bright with the eye, hands, arms or legs, will be much more apt to work acutely in mental processes than the reverse.

It is said that some young people go to college to play ball and become athletes. Perhaps it is so, yes, one in a hundred, because facilities are good there for these things. And in some colleges there is a larger number who go simply because they want an A. B. appended to their names. And this training does not merely affect the "nine" or the "eleven" or the record breakers. For, while a nine are in training, there are class nines also, and fifty others, some of whom stand as substitutes, and above all catch the spirit, the poetry, the delight of rigorous freedom of muscular exercise. The contagion and example of the athletic men reach out into men not specially gifted, or hopeful or crazed in athletic contests, and help

scores to go into the gymnasium or athletic field and breathe more, sweat more, shake up the viscera more, spread round more on the grass and mother earth, and thus keep in better physical condition. It makes them for a time forget their brain work and sends their nerve force to the skin and grosser organs of the body, and shoots the red blood corpuscles all over the body after more ozone and oxygen. Not all the boys want to go on the nine, or are wanted there, but the training they get by example and physical touch is where the leaven works. A matter incidental to this subject seems in place here. It is the test examination of children at the end of the year for promotion. The end is the intense draft and pressure on the nervous organs and functions of young and growing minds and bodies at a critical time of life. The great and growing number of nervous and kidney diseases, and the yearly increasing number of commitments to our insane asylums may find their germs in the intense pressure of school promotion examinations. May not this be lessened in part by more frequent reviews and examinations during the year, and not bring all the agony at one fell swoop? And who knows the attainments of the scholar, the teacher who had daily contact with the mind, character and temperament of the scholar for a year, or the ever so brilliant and keen examiner who, with the "experimentum crucis," in a few minutes passes his judgment on a complex matter of body, mind, character, susceptibility, home training, hereditary and kindred complaints of the child?

RELATION OF PHYSICAL TRAINING TO EDUCATION IN GENERAL.*

BY DR. LUTHER GULICK, DIRECTOR PHYSICAL DEPARTMENT Y. M. C. A., SPRINGFIELD, MASS.

IT IS my desire to show that physical training should be an integral part of general education, to indicate briefly the line that should be followed, and to represent a scheme capable of immediate adoption and involving little expense for its introduction into the public schools of this country.

That physical training bears an important relation to education in general is usually admitted. As to the nature of this relation there is much disagreement. This is due sometimes to a lack of knowledge as to the effects of exercise. I desire, therefore, to preface my remarks with a brief epitome of these.

The subjective effects of exercise may be divided into two general classes, the physical and psychical. It is impossible to draw hard and fast lines between these classes, still the division is a useful one.

* Delivered at University Convocation, Albany, N. Y.

PHYSICAL EFFECTS.

"*Function develops structure in the line of its activity.*"—Muscular action increases the number and size of muscle cells engaged in the movement. The quantity of blood flowing through the muscle is increased. This is ordinarily accomplished by the arteries that lead to the seat of activity becoming enlarged while others are slightly contracted. The blood tension is thus kept constant. When the amount of muscle used is too great to allow the demand to be satisfied in this way, the heart beats faster, and this with the preceding will accomplish the desired result. The blood flowing from the used muscle contains carbonic acid gas (carbon dioxide) in considerable quantities, exactly commensurate with the number of foot pounds or energy expended, as this is one of the chief products of expended energy. This blood is carried to the lungs and there the carbon dioxide is given off and oxygen taken in. If the amount of energy expended is at all great the carbon dioxide is passed into the lungs faster than it is breathed out, soon the blood is unable to bring itself to the ordinary degree of purity, some portions of this impure blood passing around the general circulation flows through the respiratory center in the medulla and stimulates it to greater activity, and this causes the respiratory movements to deepen and hasten. When much muscular energy is expended the nutritive processes are all accelerated, and the blood is furnished with materials to make good the waste.

Thus we see at once that there are two classes of physical effects, the *local* or effect on the muscle itself, and the *general* or effect on the heart, lungs and digestive organs through the blood. You have also noticed that in order to the general effect a considerable amount of energy must be expended. It matters not whether this be expended by a few small muscles or by many large ones. The amount expended not the locality is significant. These two classes of effects are in a measure antagonistic to each other. The condition which favors muscle growth most markedly is that as few muscles as possible shall be used at a time in order that each may secure its full supply of food. The condition which favors the general effect of exercise is that many muscles shall be used at a time so that a large amount of energy shall be spent in a short time, thus calling for activity of the heart and lungs. It is needless to say that as far as health is concerned the general effects are what we desire, increase in muscle growth not being particularly effective in this direction.

In addition, however, to these there are others in some respects of even greater importance. The nerve fibers that carry the stimulus to the muscle cells develop. They become more numerous, transmit stimuli more rapidly and with greater economy than formerly. The nerve centers that

originate the stimuli become gradually more highly organized, more capable of prolonged activity and of more intense action. During the period of their activity these centers receive a markedly increased supply of food.

To sum up the physical effects of exercise. Muscles increase in size and in contracting ability. This is the local effect. The heart is strengthened by the extra demand on it, the lungs profit by their extra exertion. All of the processes under the head of nutrition go on more vigorously. Thus the whole system is supplied with blood having greater potentiality than usual. The nerve centers become more highly organized and able to send stronger stimuli for a longer period of time than usual.

In regard to the psychical effects of exercise.—Muscular exercise seems most intensely physical and yet the first requisite for it is *will*. And further, when a muscle is used for a considerable time it becomes less able to contract, a strong will, however, will furnish stronger stimuli and secure equally forcible contractions. Very few people have strong enough wills to tire out their muscles. The will grows weary long before the muscle. A man becomes exhausted running, then attempts to play the piano but finds that the muscles of his hand refuse to contract with either their usual strength or quickness. It is not that those muscles have become tired but the central stimulating organ or will is exhausted.

This is true of muscular movements in general. Special exercises have special effects. I once asked a lady who was teaching a somewhat complicated calisthenic drill what was the first quality needed in order to excel in such work, the answer was rightly made, "concentration." The movements demanded the strictest attention, each movement was done so many counts, some eight, others four, occasionally positions were held for a few counts, and all to be remembered by the pupil. The muscular exertion demanded by the exercise was slight, the mental effort was large. The pupil who, of all the class, did the work the best was a young woman of slight physique but of unusually bright mind. With cheeks flushed, lips moving as she kept the count, and eyes intently fixed on the leader, she went through the exercises almost faultlessly. When the exercise was over I asked the teacher if she herself was tired, she said, "Yes, very tired." "Are you physically tired?" I asked. "No." "How are you tired?" After a longer pause, "I am mentally tired." These exercises were mental gymnastics far more than physical. Concentration and memory were demanded and trained far more than muscle.

Let a person who is not an expert with Indian clubs spend half an hour learning new movements, he will not ordinarily have expended very much physical energy, but he will be tired. He has had to consciously direct his muscles. After these exercises have been thoroughly learned so that they can be swung without giving any attention to them, he can swing them the same length of time without the least fatigue.

Let a person walk five miles on a level road and compare the fatigue experienced with that experience after five miles on railroad ties where the ties are placed at unequal distances. The amount of physical energy expended is not markedly different in the two cases, the reverse is true of the degree of exhaustion. A person learning to ride the bicycle finds it most exhausting work mentally, the utmost concentration is demanded. The occurrence of anything to distract the attention is sure to be followed by disaster. Thus young ladies on the street are frequently the cause of the downfall of some would-be bicyclist friend. Later on, however, the control of the machine is all done without consciousness and the mind is free for other work.

Let a lot of school children attempt to stand on one leg and then bend forward so that the body and the other leg shall be parallel with the floor. The attention of every child who attempts it will be fully occupied with the exercise.

I have said enough under this head to illustrate some of the characteristics of the mental effort that is called for by physical exercises. Qualities secured by any exercise are the qualities demanded by that exercise. This indicates their physical significance.

There is the same difference between mental health and mental education that there is between physical health and physical education. A baby may be perfectly healthy mentally and yet be quite uneducated, it may also be perfectly healthy physically and yet be quite uneducated physically. A baby's education is first physical, much that it learns comes either directly or indirectly through the muscular sense. The only sources of information that it has are physical in their nature, and the only avenues of expression that it has are physical, they are muscular. Deprive a man of all muscles and you at once deprive him of all methods of expression.

An apprentice enters a jeweler's store and attempts at once to do the fine work on a watch. He fails, not because he did not know what he wanted to do, not because he was not strong enough, but because he could not control his hands and fingers. He lacked physical education. A pianist shows a beginner how to play a scale rapidly. He understands exactly what to do, he knows where to place his fingers, but he can not do as well as his teacher, because he lacks physical control, physical education. And all the processes of learning to manage the hands and fingers are questions of physical training, and not either of watch-making in the one case or of music in the other. They both involve training of the cerebellum, the organ of co-ordination. One may have

the soul of a musician, but be without the ability to express himself. He needs primarily physical education. There is another side to this quality. A man may have perfect control over his muscular system and yet be unable to do movements which involve calculation. For instance, let a man attempt to catch a curved ball from one of our modern base-ball pitchers. He may be able to control his hands and arms perfectly, but unless he is able to tell where that ball is going to be when it passes him he will be as helpless as a baby. A man starts to jump a fence three feet high. He does not put into it as much energy nor does he jump as high as if it were four feet high. He calculates the height and jumps accordingly. This ability to calculate motion, estimate height, etc., is given only by physical training, quick perceptions, accurate judgments are involved and secured.

These in general being the effects of physical training, let me indicate briefly their relation to general and technical education.

The general effects of exercise may be summed up in one word, *Health*. The other effects of which I have been speaking by the word *Education*.

1st. It is a necessity in order to do the best thinking and living that the brain be supplied with a regular and plentiful supply of blood, that this blood be kept free from carbon dioxide and charged with oxygen, and that it be well charged with good food materials. These results can only be secured when the heart regularly and vigorously sends the blood its customary rounds, when the lungs thoroughly purify it and charge it with oxygen, when the nutritive processes of the body are so stimulated that the digestive organs do their work with vigor and thoroughness. These three results are those secured by general exercise, and can not be secured to anything like their full extent without it.

Mind may not be physical, still it is most absolutely dependent on the brain and this on the blood.

Brain building without good blood is like trying to build up a house without new materials, by tearing down what is done in one part to build in another, in the hopes that eventually all will be built.

2d. A symmetrically developed brain is impossible without the development of those centers which preside over muscular movements.

3d. The brain centers which control muscular movement are located immediately in connection with the centers of the highest psychic order, and the organization of the former with the consequent stimulated blood-flow and growth is markedly helpful in the development of the latter.

4th. The younger the child the more difficult is abstract thought. Physical exercises of the educational clash afford opportunities for developing the will, attention, concentration in ways that are definite, tangible and real to the youngest. Weak minded children differ from normal children chiefly in being backward. Judicious physical exercise, by calling for these backward qualities in a tangible way, and at the same time furnishing the food for their growth, has been the means of development of many who were both physically, mentally and morally backward.

5th. There are few trades or professions but what involve physical action in some way, and generally of some skilled variety. It is consequently of great importance that these portions of the economy, brain and muscle, that are concerned in muscular action should be trained during the period of their natural growth, for, if neglected at that time, it never again will be possible to secure the best results. A small amount of work at the right time will do as much as a large amount later. There is a proper sequence in the development of the brain centers that should not be departed from.

We must remember that all forms of physical activity are materially affected by physical exercise. The highest form of exercise of which the body is capable is expression of thoughts and emotions of gesture, attitude, facial motion or position, or inflections of the voice, and yet the acquisition of this is a part of physical training in its broad and true sense, training the body to express the mind, to mirror it out so that others may enter into the thought of the speaker.

6th. The quantity and quality of exercise given to students must vary with the age, quantity and quality of the study being done at the time. In general all need some health gymnastics. Little school children need some of the elementary educational gymnastics. The higher grades should be trained in practical muscular control so that any of the trades could be taken up with greater readiness than usual, while the highest schools should be more engaged with the practice of expressional exercises.

Children should be so trained that skilled labor in any direction can be easily acquired. A well trained mind will master a new profession much more quickly and thoroughly than one not so trained. This is equally true of the body.

I have made reference to health gymnastics and to educative gymnastics. If my paper had been longer I should have spoken of the third division of the subject, recreative gymnastics, and have tried to show how in them the will of the individual is allowed free play and that thus they are markedly different from educative gymnastics. This division of the subject is yet young, but it must enter largely into the work to be done by American school children.

The subject of physical training has been discussed very freely of late, but a great deal has not yet been accomplished, partly, perhaps, because there has been no definite plan presented that was thorough and complete, and that did not at the outset involve the expenditure of large sums of money.

I believe that the only real solution of the difficulties along these lines lies in the adoption by the public school system of the entire country of systematic judicious physical exercise.

I believe that this can be done in a thorough manner with a comparatively small expenditure of money in the following way. Let each city appoint a superintendent of physical training. Let him adopt or devise a scheme of exercise that can be carried on in the present school rooms without further apparatus than the floor and desks afford. Of course this must be adapted as I have already indicated to all grades and for the various objects of exercise. Let him meet the teachers of the city once or twice a week and give them instruction in both the theory and the practice of the exercises for the pupils. Let this instruction be given in one of the large class rooms in just the way in which the pupils should have it. Let these teachers then give the exercises to the pupils. I do not argue that regularly appointed gymnasiums are not desirable, they are, but excellent work can be done without them. The namby-pamby movements that usually go by the name of calisthenics are not what I refer to. I mean good vigorous exercise, both for health and recreation. The superintendent of physical education should spend his time aside from that required to instruct the teachers, in systematic visitation of the schools and in council with the teachers.

The blind following out of any of the so-called systems of gymnastics will not accomplish what I have been speaking of. The best of them, the Swedish system, was built up for Sweden, the nervous conditions of American city children are very different from those found in Sweden. The gymnastics which they are most profited by call for most intense concentration and self-control, and are not as beneficial to us as they might be. The American child is not the Swedish child, and can not be similarly treated if the best results are to be secured.

My reasons for advocating such a system are briefly (1) that it can be done at once, it involves no great outlay at first, increased facilities can be given when the success is demonstrated, and (2) that I believe that thorough work in all the grades can be done in this way.

I wish that a commissioner of physical education could be appointed for the nation. Could not such an institution as the University of the State of New York employ a competent man to forward the interests of this subject in the educational institutions of the state? Would it be possible, and if possible desirable, for the state legislature to render physical education compulsory in all the public schools of the state? Physical education has vitally to do with the mental and moral life of the nation. Few truths are more clearly taught by history than that the physical condition of the people determines the fate of the nation.

The growth of the cities, with the consequent city life, the general use of machinery, medical science keeping alive the weak, the increasing intensity of life, all combine to make natural physical exercise more wanting and artificial exercise more necessary.

DIFFERENTIAL DIAGNOSIS OF ACUTE FOLLICULAR PHARYNGITIS AND DIPHTHERITIC PHARYNGITIS, WITH TREATMENT.

By Henry N. Avery, A. M., M. D.,
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IT SEEMS to me proper that a more careful study of these diseases should be made, so that error of diagnosis may not mislead the physician and horrify the patient. There can be no excuse for a physician to call follicular pharyngitis, cynanche maligna, for the sake of a little glory in being able to cure diphtheria in two or three days, for I have known cases where it was supposed diphtheria was present, when in reality it was only follicular pharyngitis, and *vice versa* pharyngitis was supposed to be present, when, in fact, diphtheria was developed, and valuable time may be lost, where the physician is uncertain and decides that the next twenty-four hours, will develop the disease sufficient to determine.

The diagnosis of the disease is of first importance, then the proper selection of the remedies. We certainly have made progress in the treatment of these diseases in the past twenty-five years, and homœopathy can claim her share of reward in her results, whether high, low, or medium doses are to be used will have to be determined by each prescriber. I shall only point out the remedies that are the most useful, and then let the individual prescriber choose the strength of his remedies to be administered.

It is always well to bear in mind that diphtheria is a specific constitutional disease manifesting itself in the pharynx and surrounding parts generally, and also remember the exudations and secretions are of themselves septic and toxic, therefore local treatment is important.

Acute catarrhal pharyngitis may commence in a chill, followed by fever, fullness of throat and enlarged sub-maxillary glands, the mucous membrane over the tonsils congested, the uvula enlarged and the pharyngeal glands enlarged, exuding a yellow mucous, sometimes in spots and then again flowing down the pharyngeal walls, this is a catarrhal trouble, and does not depend always upon an epidemic of diphtheria to produce it. It is, to a certain extent, contagious, for I have had as many as twenty cases at one time in boarding schools.

If a bent probe with a swab of cotton is used, it will be found the exudation *can be wiped off*.

In the initial stage, acon., bell., merc.-proto., lachesis, kali-bicrom. will be indicated internally, hammamillis, bi-car, soda. (saturated solution) as gargle. After exudation takes place, kali-bicrom. weak solution, as gargles, if the latter is swallowed, a little nausea may follow, which is not detrimental, the third day generally sees the patient on the road to recovery.

In looking for diphtheria locally, the first evidence we have of this specific constitutional poison is a passive hyperæmia, then an excess of mucous, producing a cloudy appearance of the epithelium, having the appearence of a veil over the point of exudation, showing the first exudation is into the epithelium, *this can not be wiped off*, characterizing this from acute pharyngitis, the exudation of which *can be wiped off*. The cells of the deeper structure soon become involved, and then we may have the yellow or white patches or gray exudation of a leathery character, which *can* be removed, leaving a raw surface, and the second formation may be more tenacious than the first. When the rapid exudation into the epithelium takes place or the lymphatics are obstructed and the blood is cut off—then we have death in these parts or gangrene, and may involve tissues other than the mucous or sub-mucous layers.

In the epithelium stage of diphtheria the following treatment may be indicated: Eucalyptus oil one part, alcohol twenty parts, as gargle every hour; if pain in throat, ice bag may be applied to throat, cold milk and brandy every hour, and ice to swallow if desired; internally, merc.-proto., lachesis, kali-bicrom., carbolic acid.

In the membranous stage constant use of steam, hot fomentations to throat, which materially assists in detaching the membrane, as gargle, Trypsin two per cent. sol. in alcohol, hydrochloric acid dilute, also free nourishment and stimulation by alcohol, internally, mur.-tinct. ferrum and potash, merc.-proto., lachesis, kali-bicrom., nitric acid, quinine and corrosive sub., as indicated; the cor. sub. can be given one-quarter gr. in forty-eight hours to a child two years of age, if required.

In the gangrenous form free stimulation and nourishment, as gargle, Trypsin two per cent. sol. in alcohol, hydrochloric acid dilute, boracic acid, 1-1000 sol., corrosive sub. sol.; internally, lachesis kali-bicrom., cor. sub., salts of iron, quinine and carbolic acid. With a proper selection of the foregoing remedies to suit individual cases, the mortality from diphtheria may be greatly reduced.

The Effect of Asparagus on the Urine.—An experimental investigation by Prof. Nencki, of Berne (*Archiv. F. Exp. Path. U. Pharm.*, Bd. xxviii, Hft. 3 U. 4.), has shown that the familiar change in the odor of urine which follows the eating of asparagus is caused, in all probability, by methyl-mercaptan, a substance formed in the albuminous disintegration which takes place in the germination of the plant. This odoriferous body is one of the products of fermentation of albumen, and also of gelatin, and it forms one of the constituent cases of the large intestine.

SOME PRACTICAL OBSERVATIONS ON THE PROPER CHARACTER OF EXCIPIENTS FOR AUTO-DISPENSATION OF THE REMEDIES OF THE NEW SCHOOL OF THERAPY; WITH SPECIAL REGARD TO THE PECUNIARY ASPECT OF THE SUBJECT HEREIN SET FORTH.

BY FRANK A. ROCKWITH, M. D., SAGINAW, MICH.

PART I.

WHEN Hahnemann promulgated his remarkable canons of therapy, he also altered, at the same time, the prevailing methods of pharmacal dispensation. And just as the conception of simplicity in medicine was the substratal idea of his system of therapy, so did the same thought control him in the sequential development of a new pharmacy. This idea of medication was based upon the principles of a uniform and metrically limited simplicity of the drug-agent, and for which singleness of form was the only admissible corollary.

The early decennials of the nineteenth century found the boundaries of chemistry in still too unsettled a state, a condition which could not fail to react disadvantageously upon the apothecaries' art, as well as upon jatrosophic science in general. Time-hoary traditions and rampant ideas concerning the really practical and necessary in medicine had begotten an obedience to pharmacal forms more imposing than assuring to the minds of medical men in general. To correct these was Hahnemann's self-imposed mission and assumption.

The childlike simplicity of his mind could not, however, soar beyond watersips, sugarplums and the smelling-bottle; which last, thanks to the charitable tolerance of science, became too ephemeral to ever have become a lasting laughing-stock or of serious reproach.

When we now, after nine decennials interrogate the spirit of a prevailing discontent with some of the often asserted foibles and fallacies in at least the pharmacal portion of his system, the question for mulates itself as to whether the experiences of time have really demonstrated the universal practicability of the excipients, as well as the positivity of the scientific manner of homœopathic pharmaceutics. That the Hahnemannian practice of medicine has been an enduring and self-dependent fixture in society will hardly be controverted, but that its pharmaceutics has been anything more than a mere system of medical supply agency, rather than an associate faculty of the school which gave it its name and social respectability can not be asserted.

In fact it must seem evident to any one of an unbiased mind, that all that fraternity has succeeded to make of itself is not honorable and dignified pharmacopoli, but simply unscrupulously trafficing pharmamonopoli. But a still closer study of the subject of homœopathic pharmaceutics forces upon us the fact that the New School of medicine

has really no need whatever of so expensive an appendage as pharmacopoli or drug-dispensers; who, to say the most of them, can at this day of our æra act only the part of middle-men between manufacturing chemist, drug importers and the consuming medical profession.

It is a far different matter with the old and dominant school of therapy; in it, pharmacy, that big white elephant of long ago, has made itself an indispensable factor, albeit also, an never really welcome, but meekly endured parasite. The thraldom of pestil and spatula is too intimately blended with the dignity, as well as multifariousness of constitution of that school of medicine, to ever be possible of entire extinction.

The medical system of the near future, whose germ I think may be perceived already in that of the New School of therapeutics of to-day, will sooner or later develop a system of jatro-pharmacals for its own convenience, and which, by making appendages useless, will more and more fulfill Hahnemann's idea of simplification. The practitioner of the New School of therapy, who is unwilling to trust the dispensation of his prescriptions to the shark-mouthed druggists of the Old School, nor willing to yield up twenty-five per cent. of his earnings to the self-styled pharmacist of the new, and with enough of the milk of human kindness in him to help lessen the burdens of expense of the sick-room, will do well to study up the question of auto-pharmacy in its pecuniary, as well as rational sense of view. To such I will endeavor to review seriatim, article by article, the various elements of the materia medica and see by what practically rational method medicine may best be dispensed, not only for the personal profit of the practitioner himself, but also for the general good of all mankind concerned.

But before doing so, I feel constrained to interject here the admonition to both college authorities and the students of medicine that a more interested and persistent attention be given to the study of chemistry in its widest medico-forensic sense, an aspect of the subject sadly ignored in the American curriculum of the medical education.

Chemistry in this country is the bête noire of the medical student. It is a subject which he approaches only with gloved hands and upturned nose; for the reason that, he sees in it no actually useful application to the practice of medicine, a matter of an entirely different view if he could be made to keep pharmacy constantly in his perspective.

Of course, one can not attempt successfully a study of medico-pharmacal chemistry without possessing at least a rudimentary knowledge of mineralogy, botany and zoology. Three elementary branches constituting the foundation of chemistry, as well as physiology.

Such a course of study should be made imperative during the first or philosophical year of medical study.

Every chemical laboratory should possess also a pharmacognostic museum where specimens of the commercial drug might be studied alongside of the spurious article, so that when the new-made doctor starts out on his career of self-dispensation he may be able to buy at first hand and not be handicapped by ignorance nor be compelled to pay usurious tribute to middle-men because of an ignorance of the law of proper dispensation of the drugs which he may be seeking to get into the obedient systems of his ever trusting patients.

CLINIQUE.

SOME CLINICAL VERIFICATION OF CINERARIA MARITIMA IN CATARACT.

By John Arschagouni, M. D., Ward's Island Hospital.

IT HAS already been reported* that Dr. Mercer, of Trinidad, where this plant grows, had used the juice (preferably from the leaves of the ripe plant), one to two drops in each eye three times per day, in a case of cataract in which the right eye had been operated upon without giving him vision and the left could not distinguish light from darkness. After the use of *cineraria maritima*, for about a couple of weeks, he could tell the time by his watch and in eight weeks he could even count his fingers with his right eye.

On the other hand, Mr. C. Crinon, in "Revue des Medicaments Nouveaux," spoke thus about this plant:†

"Known as *senecio maritimus* (synanthérées) common at sea shores, especially in the south, cultivated in gardens for its silvery leaves of a silky appearance. The juice of this plant used by two drop doses, three times per diem, has been recognized in the cure of cataract."

Mr. H. Bocquillon-Limousin, in the "Formulaires des Médications Nouvelles," had given similar botanical information upon *cineraria maritima*, speaking meantime of two cases reported by Dr. L. M. Barnouvin, of Lyon, one cured the other improved:

Case I.—Lady ——, blind for six years, after several months of treatment with the juice of this plant could perfectly distinguish persons and things.

Case II.—A gentleman of sixty-one years old, blind since one year, and after some weeks' treatment he already began to distinguish the shadow.

Recently Dr. Em. Pellerin, of Algiers, in a letter dated 19th of June, 1891,‡ reports the following

* "*Allegem. Hom. Zeitung*," 1st of August, 1880, and "*Hahnemannian Monthly*," November, 1880.

† "*Journal d'Hygiene*," 16th of October, 1890, and "*L'Art. Medical*," January, 1891.

‡ "*L'Art. Medical*," July, 1891.

case of a lady æt. seventy-four—the mother-in-law of one of his patients—living in the neighborhood of Arras (Pas-de-Calais), who a long while had a cataract but, due to her old age, she always hesitated to be operated on. Dr. Pellerin advised his patient to ask his mother-in-law to submit herself to a medical treatment, which was accepted.

The treatment began on the 2d of March, 1891. ℞. *Cineraria maritima*, two drops of the M. T. in a spoonful of water, and out of this solution two drops in the eye three times per day. On the 4th of May, 1891, the old lady on waking has been able to distinguish the curtains of the windows, and on the 17th of June, Dr. Pellerin received a letter of thanks from his patient, stating that his mother-in-law had recovered her sight.

In bringing out this last case also before the profession, we do hope that *cineraria maritima* will have a fair trial, particularly by specialists of any school of medicine, and should this drug prove to do what already it is credited with, no doubt a most valuable therapeutic agent would be added to our materia medica.

THE THERAPEUTIC VALUE OF CARDUUS MARIANUS AND TURPENTINE IN GALL STONES.

BY H. T. MILLER, M. D., HOUSE SURGEON, WARD' S ISLAND HOSPITAL.

MY OWN experience in the use of these two drugs in gall stones only covers a period of about one year, while that of my father, Dr. J. M. Miller, whose clinical notes, I purpose to use, covers, at least, four.

While perusing Rademacher, I find he first learned of the value of these two drugs in the treatment of gall stones.

The mode of administration is to give the tincture of carduus marianus, on alternate days with the spirits of turpentine: the former in ten drop doses, three times a day, and the latter combined with Hoffman's anodyne, one to sixteen, also ten drops, three times a day.

Turpentine combines very readily with Hoffman's anodyne.

Case I.—Mrs. P. Commencing January, '90, with dull, then sharp, shooting, stabbing pains in the right hypochondrium, followed by vomiting, rigors, and an elevation of temperature: in fact, jaundiced, and all the symptoms that would characterize an attack of gall stones, soon manifested themselves.

The paroxysms would occur on an average of every two months, until she came to us for treatment.

She was given the carduus marianus and turpentine. The paroxysm became milder, shorter in duration, and the intervals between the paroxysms further and further apart.

This treatment was persisted in for about three months, until now, somewhat over a year, she has been absolutely free from any symptom of gall stones.

The diagnosis was verified in this case by the passage of a concretion.

Case II.—Mrs F., æt. 70. This case occurred in our practice last summer. It commenced somewhat like the foregoing case, only not so severe. She has had no attack since last fall, but still continues to take the carduus and turpentine.

Case III.—Mr. C., æt. 55. Had been treated by all schools with no benefit for about three years. This case was very similar to the first. Would leave the patient in a very exhausted condition for nearly a week. He was given the carduus and turpentine, and since last winter, six months after the treatment was commenced, he has considered himself a well man.

These are only a few cases that have been treated with carduus marianus and turpentine. In all there has either been a complete cure, as far as symptoms are concerned, or a decided amelioration in the severity of the paroxysms.

DIETETIC THERAPEUTICS.

Influence of Alcohol Upon Digestion.—Wolefhardt (*Mün. Med. Wochen.*) has recently experimented on himself in order to ascertain the action of alcohol given in various strengths before, during and after meals, and his conclusions are: (1.) Absolute alcohol has an unfavorable effect on the digestion of starch and meat when given in larger quantities than ʒss—ʒi. (2.) Brandy in doses of ʒij slows the digestion of starch, but helps the digestion of meat if taken with the meals; if taken later, hinders it. If ʒiij are taken at varying periods after eating, digestion is delayed still more. ʒi after meals helps digestion. (3.) Red and white wines taken either before or with the meals assist digestion.

Vegeterianism for Epilepsy.—Dr. John Ferguson insists upon reducing the nitrogenous principles in the body in the management of epilepsy, and states that he has treated some epileptics on this food plan without drugs, and obtained better results than when he used bromides in the usual way without this restriction in diet. In epilepsy there is an extremely unstable condition of the nervous molecules, and this instability can be lessened by reducing the food supply of the molecules, as clinical experiences proves. Eggs, lean meat, red fish flesh, cheese, peas, beans and similar nitrogenized articles of food are prohibited; and under this diet it is much more difficult for the nervous system to build up unstable molecules and nervous irritability is lessened.

Influence of Various Diets Upon the Urinary Albumen in Chronic Nephritis.—Sassjadke (*Med. Wochenschrift*, Dec., 1890,) made a comparative investigation with reference to the effect of purely vegetable, animal and mixed diet upon uncomplicated chronic nephritis. Vegetable diet reduces the albumen of the urine; but, aside from the fact that patients do not bear this diet for any length of time, it produces apathy, lassitude, indisposition to exercise, and a reduction of blood pressure. Animal diet increased the albumen, but improved the patient's condition—blood pressure was increased, appetite improved and general condition excellent. A mixed diet has almost the same effect as the purely animal.

As we must grant that, in the present state of our knowledge, the kidneys are not only diseased, but that the entire vascular system is affected, we must not confine ourselves to remedies which reduce the albumen in the urine, and we must endeavor to improve the patient's nutrition by good diet and then remove the tendency to ischæmia. The most useful diet in Bright's disease is the mixed diet. Dr. S.'s observation that chestnuts reduce the albumen in the urine is interesting.

Milk and Typhoid Fever.—Dr. Vincent, physician to the Geneva Board of Health, has just published a careful report on the typhoid epidemic which raged in that city last spring, particularly in the Quartier des Paquis. He succeeded in tracing the outbreak to the milk with which the people in general, and the inhabitants of that quarter especially, were supplied. The most culpably negligent and untidy system of cleansing the milk cans prevailed; indeed, in one extensive dairy he saw a milkman spitting on his hands in order to lubricate them for the scouring process to which he presently subjected the inside of these receptacles. Another source of the mischief was found in the carelessness with which the watering of the milk was practised—any water, pure or impure, being reckoned suitable. He strenuously urges on all who wish to escape the risk of contracting typhoid, to boil their milk, and to see it done themselves. Milk sold as already boiled had not, in many cases, been properly boiled at all. The most perfunctory methods of boiling he found in constant practice. The moment the milk began to stir in the boiler and to bubble a little it was regarded as boiling and taken off the fire! Even had the boiling point been adequately reached, he insists that the milk should still be kept on the fire for some minutes, if it is to be made perfectly innocuous. On the present system he thinks the microbes it is sought to destroy have every chance of surviving and of propagating their kind to increased activity.

Consumption of Fruit.—Much fruit, as we get it in the market, has undergone processes of preparation which unfit it for use with many people. J. Milner Fothergill says that a great amount of fruit that would have been of inestimable value in our dietary, has been spoiled by incorporating with it in the cooking process a quantity of cane sugar. Many stomachs can take mildly acid fruits and be benefited by them, but when taken along with sugar they occasion great distress. One or two raw apples, taken with a meal and thoroughly masticated, will often be found a great aid to the stomach in disposing of that meal.

Raw Eggs in Albuminuria.—A writer in the *Medical World*, having seen an article in a journal forbidding the use of eggs in albuminuria, relates the case of a strong, robust man, about forty years of age, who had been the victim of albuminuria for nine years past, and had been pronounced incurable. He had been put upon an almost exclusive milk diet and silurian water, and being tired of this, was advised to eat raw eggs. He started upon six daily, and in two weeks afterwards called to say that he enjoyed them very much; and that the amount of albumen (which he had been in the habit of testing for himself) had largely decreased. He now looks well and is still using the eggs with the same good results.

Heart Foods (L. C. Winsor, M. D., *Dietetic Gaz.*, April, 1888).—As the heart is the organ of circulation, and the circulating blood is the commissary and the scavenger of the tissues, the real point of attack in heart diseases is the tissue cells themselves, they being the underlying cause of the demand on the heart. This demand comes not only from the extremities, muscles, bones, etc., but from the heart walls, blood vessels, and every particle of matter in the body.

The foods which are ingested to sustain life we may divide into two classes, according to their use: 1st., the fuel foods; and 2d, the tissue foods. The first are the hydrocarbons and fats, and the second the albuminoids. Of these two classes of foods, the second is the most important one in heart diseases, for the reason that the aim is to increase the strength of the tissues themselves, and to revive the functions of the viscera, in order that the fuel foods may be properly assimilated.

The tissue food given should be of such a nature as to be *easily* assimilated, such as digested milk, beef peptones, etc.

By a judicious use of such tissue foods, the plasma of the blood is made rich in building material, the sluggish circulation due to the heart lesion is compensated by the enriched condition of the blood, and soon the heart walls are strengthened sufficiently to do the work required without any overstrain.

But we have another food which is of utility in these cases, and that is oxygen gas. As a rule, the lungs are not considered as an organ of nutrition, but examine the functions of respiration closely, and there can be no dispute on that point. The *besoin de respirer*, as is well known, does not lie in the lungs themselves, but is caused by a want felt by the system at large.

This fact is shown in the dyspnœa in heart disease, when the lungs are performing their functions perfectly and the pulmonary circulation is fairly good. The non-oxygenation of the tissue cells is the cause of the sense of the want of air, and to those must we direct our attention, as before. The oxygen of the air when whole is united with the hæmoglobin of the blood to form oxyhæmoglobin, or, as some authors claim, it exists in the blood in the form of ozone. It is then carried to the tissues, and enters into combination with them, displacing the excrementitious carbonic acid gas.

What the intermediate process is, between the absorption of the oxygen and the giving off of carbonic acid, is obscure. Whether it is the means of combining the products of digestion for the regeneration of the cells, or whether it is assimilated directly itself, is not known. But every one knows that without oxygen no one can live even five minutes. Its action is one of nutrition, and most important; .68 of our body is made up of oxygen; how necessary then is it that we have an abundant supply of it, and that the means of distributing it to each cell be preserved in the best possible conditions. It is a fact that tissue will absorb oxygen, and give off carbonic acid without the intervention of the circulation, and so we may believe that the appropriation of oxygen is due simply to the demand of the cells, and not to any peculiar form of the oxygen or any combination of it in the blood. The sluggish circulation of the blood in organic heart disease does not supply sufficient oxygen to the body, and hence the symptoms, dyspnœa, headache, fainting spells, debility, etc., which arise.

The rational method of diet should not only include the foods previously mentioned, but also an increased supply of oxygen. We can see no objection to classing oxygen as a food, and placing it pre-eminently as such. (It may be classed as a fuel food, but as a tissue food it has no equal.) It is the basis of all tissue building. An *increased* supply of oxygen rather than a stimulated circulation, a *saturating* of the blood with oxygen rather than an increased supply of poorly oxygenated blood, is the ultimatum of diet in heart diseases. The effect of this plan of diet will be to increase the supply of readily digestible tissue food, and to furnish an abundance of oxygen, the agent which of all is the most valuable for tissue building. This done, there will be but little left for drugs to accomplish.

As to the administration of oxygen, it has become so well known, and the methods for administering it so improved, that it is at the command of every physician. Clinically this method of diet has proved successful in my own practice, and it is well worth a trial by all.

On the Relative Nutritive Value of Boiled and Unboiled Milk.—M. Vasilieff made observations upon six healthy young men, feeding them three days on boiled and

three days on unboiled milk, with the following conclusions (*Jour. de Méd. de Paris*, May, 1890): 1. The assimilation of the nitrogenous elements in boiled is less perfect than in unboiled milk. 2. The assimilation of fatty matters follows, even more distinctly, the same rate. 3. The quantity of fatty acids which are contained in feces is notably greater in those who were fed on raw milk. 4. Consequently, the nutritive value of boiled is less than that of unboiled milk. 5. The difference is accounted for by the rapid conversion of the casein of boiled milk into hemi-albuminoid.

Vegetarian Diet.— Dujardin-Beaumetz (*Wien. Klin. Wochenschrift*, April 10, 1890, claims that this diet thoroughly subserves alimentation of the organism; the best proof of which is furnished by the poor peasants who do not eat meat, yet they are strong and healthy. This diet is of therapeutic importance in certain diseases. A vegetable diet limits to a minimum the production of toxines, such as neurin, muscarin, etc. It is indicated in insufficient functional activity of the kidneys and alimentary canal, indeed, in all similar conditions where an accumulation of ptomaines in the blood might prove dangerous. It is also indicated in putrid diarrhœa. In diseases of the stomach a vegetable diet is especially indicated, as the intestines are principally employed in its digestion, thus affording the stomach considerable rest. In the uric acid diathesis, this diet is also recommended.

Dietetic Management of Summer Complaint.—B. K. Rachford, M. D., in *Archives of Pediatrics*, formulates the following rules, as aids in selecting a diet in summer complaint, when it becomes advisable, as it usually does, to temporarily discontinue milk:

1. Avoid albuminous food (*a*) when marked constitutional symptoms are present; (*b*) when in doubt as to the character of the fermentation causing the disease; (*c*) when the stools are putrid; (*d*) when the stools contain mucus and blood; (*e*) when the nausea is constant and not relieved by vomiting.

2. Avoid carbohydrates as a food (*a*) when there are no marked constitutional symptoms present and the stools are continuously acid; (*b*) when there is much flatus, pain or urticaria.

3. When the albumens are to be avoided the carbohydrates are, as a rule, indicated; and *vice versa*.

4. Give foods, such as cream, beef broths and whiskey (*a*) when the foods prescribed according to the above rules disagree; (*b*) during the first twenty-four hours in severe acute cases; (*c*) when in doubt as to the character of the food indicated.

In conclusion, let us note the foods that are of greatest value in the treatment of summer complaint and the indications for their use:

Whiskey, one of the most useful, never contraindicated, especially useful in acute cases during the first twenty-four hours of treatment, but may be given at any time in either acute or chronic cases.

Meat broths contain so little albumen and carbohydrates that they are never theoretically contraindicated. They may be given at any time in either acute or chronic cases, but they are especially indicated in acute cases after the first twelve or twenty-four hours of treatment.

Cream contains so little albumen that theoretically it is never contraindicated. It can do no harm in any form of the disease, but it will be found to serve the best purpose in chronic cases, and after the third or fourth day in acute cases.

Barley water and oatmeal water may be mixed with milk to advantage, as they machanically facilitate the digestion of caseine. In this combination they may be useful in chronic cases and in convalescent acute cases.

White of egg is contraindicated in all cases of summer complaint when there are marked constitutional symptoms present, or when the diarrhœa is putrid or mucous, but it may be used in that form of the disease dependent on an abnormal acid fermentation, and the indications of this condition are sour stools with pain, flatus, or urticaria, and the absence of constitutional symptoms. It may also be used as a permanent article of diet in infants incapable of digesting the caseine of milk.

Meat juice is one of the most valuable and easiest digested of the albuminous foods. It is indicated when the symptoms indicate that the disease is caused by an acid fermentation, and in chronic cases when other albuminous foods disagree. It may also be used as a permanent article of diet in infants incapable of digesting the caseine of milk.

Sterilized milk, in small quantities and greatly diluted, may be used as an article of diet in many of the milder forms of summer complaint. The reason why milk frequently does not aggravate the disease, when given in this way, is because the caseine and sugar of milk are taken in such small quantities that they are thoroughly disposed of before reaching the seat of the disease in the intestinal canal, while many cases do well when fed in this manner. I think we run an unnecessary risk in attempting to feed upon milk during the most acute stage of the disease, when we have other palatable and less dangerous foods. But after the constitutional symptoms have subsided and the most acute stage has past, the milk is indicated, and may be given as directed above.

Mother's milk has the same indications as sterilized milk.

Peptonized milk is occasionally useful in chronic cases incapable of digesting unchanged caseine.

New Test for Albumen in Urine.—The following test has been published by Zouchlos (*Rundschau*), and is recommended on account of its simplicity and accuracy; three ounces of a ten per cent. solution of rhodium potash, with six drams of acetic acid; of this a few drops are added to the suspected urine. If albumen is present, there is at once formed a distinct cloudiness, which is insoluble in excess of the solution.

Effect on Offspring of Consanguineous Marriages.—Drs. Louis and Gustav Lancry publish, in *L'Union Médicale*, the results of their investigations on this subject. Their conclusions, based on a study of sixty-three consanguineous marriages, are that the marriage of blood relations tends to the diminution of the birth-rate, but that it has no prejudicial influence upon the children born of such unions.

The Three Kinds of Diabetes.—According to Professor Lancereaux there are three kinds of diabetes. 1. Traumatic diabetes, which appears after injuries to the brain and spinal cord. There is moderate polyphagia, polydipsia, polyuria, and glycosuria, and the prognosis is generally favorable. 2. Pancreatic diabetes. This is the form ordinarily called diabetes mellitus. It is characterized by severe polyphagia, polyuria, and glycosuria. It is supposed to be due to some disease of the pancreas. 3. Adipose diabetes. The symptoms are of moderate severity and the excretion of sugar scanty.

Paralysis from Hypodermic Injections of Ether.—It has been shown by Arnizan and Salvat, and also by Petres and Villard, that hypodermic injections of ether may produce a local destruction of the nerve-fiber just as if a section of it with a knife had been made. Of course, paralysis and anesthesia may follow. A good many cases of such accidents from the injection of ether have been reported. The patients recover, but still there is harm done; and physicians who inject ether hypodermically should never insert it in the arm or legs, but always in the trunk; and the injections should be superficial.

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HISTOLOGICAL CHANGES IN DIPHTHERIA.

THE KEY to the histological changes produced in the human organism by disease is undoubtedly by experimental work upon animals, always provided the results obtained are confirmed by the symptoms during the progress of the disease, and the pathological changes shown in the human organism after death. If we find the same histological changes in the animal which has died after inoculation with the virus taken from the diseased human being, it shows that the disease is identical in both, and that the ptomaines produced by bacillus changing the atoms of human tissue and the tissue of the wild animals is precisely the same in their fearfully destructive character. We have been exceedingly interested in the series of experiments made in the pathological laboratory of the Johns Hopkins University and Hospital by Profs. Welch and Flexor, which show the identity in histological changes of human diphtheria and experimental diphtheria. We quote from the August *Bulletin* of the University:

"The cultures used in our work were obtained from undoubted cases of primary diphtheria occurring in Baltimore, and they were in all cases pure cultures of the Klebs-Löffler bacillus.

"The inoculations were made into the subcutaneous tissue of the belly wall, a site being chosen midway between the axillary and inguinal regions. There was one exception to this rule, in the case of a kitten on which tracheotomy was performed and the inoculation made into the trachea.

"Death occurred in the animals experimented upon in the following lengths of time:

"Guinea pigs—shortest period, 38 hours; longest period, 5 days. Rabbits—shortest period, 48 hours; longest period, 8½ days. Kittens—shortest period, 43 hours; longest period, 5½ days.

"The cavities of the body show alterations. In some cases the peritoneal cavity contained an excess of fluid. Both the visceral and parietal layers of peritoneum were much injected, and ecchymoses were present in some cases. The mesenteric glands and retro-peritoneal glands were enlarged, and sometimes distinctly reddened.

"The organs were not unaffected. The liver was congested; at times evidently fatty. In guinea-pigs, especially, the liver showed numerous macroscopic dots and lines on the surface and penetrating the substance of the organ. In a less degree this was true of kittens also. These dots varied in size from a pin-point to a pin-head; sometimes they were even larger. The lines were two mm. in length, or less. They appeared white, and did not project above the surface of the capsule.

"Though the spleen was not perceptibly enlarged in all cases, yet in some it was markedly enlarged. There was considerable variation in this respect. Its color varied: in guinea-pigs there was no striking alteration, while in kittens the spleen was dark, often bluish black.

"The kidneys were moist and hyperæmic.

"The adrenals always showed an intense congestion, and in many instances were hemorrhagic.

"The intestinal lymphatic apparatus showed interesting alterations. The agminated glands of the cæcum and the ileum in guinea-pigs and kittens were abnormally prominent. They projected above the surface of the bowel, and exhibited a number of whitish points imbedded in a grayish material.

"The pleural cavity contained in many cases an excess of fluid, amounting, at times, to three or four cc. The mediastinal glands were swollen and reddened, and the bronchial glands likewise. The heart appeared normal, while the lungs sometimes showed areas of congestion, and even of consolidation. The deep glands of the neck were often reddened, and the thyroids were uniformly congested, sometimes hemorrhagic.

"Sections made from the seat of inoculation showed the bacilli in great numbers.

"The local action of the bacilli is of the most intense character. There is emigration and great destruction of leucocytes shown by disintegration of their nuclei; the fixed cells of the part have undergone a similar fragmentation, nuclei of connective tissue and muscle have succumbed, and leucocytes have wandered into these areas, many

of the latter being destroyed also. There would appear to have been a proliferation of muscle nuclei in places not all of which have become fragmented.

"*Lymphatic Apparatus.*—The lymph glands of the axillary and the inguinal regions were greatly affected. The changes in these structures are very typical.

"There are hemorrhages under the capsule and into the substance of the gland. The blood-vessels here as elsewhere in the body contain a greatly increased number of leucocytes.

"The cells of the gland are the seat of great changes. The principal lesions are in the lymph follicles, the lymph cords and lymph sinuses being also affected, though in less degree. Different follicles are affected in different degrees, and there are variations in different animals even of the same species. But in no instances were the lesions entirely absent.

"In the lymph sinuses, especially, occurred a considerable number of round or slightly oblong cells, quite colorless in appearance, containing bodies which resemble in a striking manner red-blood corpuscles, and these cells remind one of the red-blood corpuscle carrying-cells of the typhoid spleen. In alcohol preparations it was impossible to determine the exact nature of the contents of these cells. Similar cells were found in the mesenteric glands and the spleen; in osmic acid preparations, on the other hand, they are shown to be red corpuscles.

"An alteration similar to that just described is found throughout the lymphatic structures of the body: in the spleen, mesenteric glands, retroperitoneal glands, intestinal lymphatic apparatus (Peyer's patches, solitary follicles, and diffused lymphatic tissue), the bronchial glands, mediastinal glands, and cervical glands. The only variation is one of degree. As far as our study has gone every gland examined has been more or less affected. The spleen is often very rich in nuclear fragments and foci of coagulation necrosis.

"The cells of the *intestinal villi* in guinea-pigs and rabbits and the epithelium of the intestinal mucous membrane were involved. The lesions in these structures showed a like tendency to vary in intensity.

"An important change could be made out in livers in connection with the central veins of certain lobules. Hemorrhages under the capsule were quite common, and in these lobules deep-seated hemorrhages into the tissue had taken place. These varied greatly in size, some being very small while others were quite large, involving the greater part of the lobules. It was observed that such intra-lobular hemorrhages originated in the central veins, and seemed to be due to a breach of continuity in their walls. For, when they were small a minute defect could sometimes be seen, and where they were larger a considerable rent was present in the vein wall through which the blood had escaped.

"*The Kidneys.*—Fresh frozen sections showed in guinea-pigs and rabbits fatty changes in the epithelium of the tubes and glomeruli. In kittens, owing to the large amount of fat in the epithelium normally, it is not easy to make out a pathological increase. Yet there would appear to be an absence of fat in the epithelium of the glomeruli and collecting tubes in the cortex under normal conditions. In some of our cases these structures contained minute fat drops. A more important change is a hyaline alteration of the glomerular capillaries and the smaller arteries. This was noticed in kittens in particular; and it often affected a few loops of a glomerulus, without involving the entire mass of capillaries. Hyaline substance was found completely filling the lumen of some capillaries.

"Hardened and stained sections showed besides the hyaline change just mentioned fragmentation of the nuclei of the glomerular and tubal epithelium on a small scale, and the presence of minute deeply-staining round bodies between and in the tubal epithelium.

"*Adrenals.*—These were generally congested, hemorrhages were often present, and in two cases the medullary cells were distinctly hyaline.

"*Lungs.*—There were often hemorrhages under the pleura. The blood vessels of larger size are distended with blood, and the number of leucocytes in them increased. The capillaries in the walls of the alveoli are distended with blood likewise, and there are hemorrhages into the alveoli. There is an exudation into some of them consisting of leucocytes and fibrin; but the leucocytes are few in number. There are many large cells present having a round nucleus of considerable size which stains quite deeply, but not solidly, with fuchsin. These cells are present in the areas of consolidation, and they are found also in considerable number in the nodes of the alveoli, that is, the points at which several of them come together. They are probably derived from the epithelial cells of these structures.

"Fragmentation of nuclei is not a prominent feature in the lungs. It does occur, but not extensively. It was noticed in the areas of exudation, where it effects the nuclei of the large round cells as well as the leucocytes. Then it is seen in the epithelial lining of the larger bronchi, and in

those bronchi that contain leucocytes fragments of nuclei are present in their lumina amid the exudation.

"The *heart* was the seat of a fatty degeneration, more or less intense, in nearly every case. In many of them every muscle fiber seemed to have undergone a minute fatty metamorphosis. In others the process was less general.

"Another change was noticed in the nuclei of the *muscle* fibers in certain cases. It consisted of a fragmentation similar to that in other parts.

"The muscles adjoining the lymphatic glands of the axillary and inguinal regions showed degenerative changes. There was necrosis of muscle fibers and wandering in of large numbers of leucocytes, a myositis being the result.

"Cultures were made from the blood, liver, kidney, and spleen of these animals with negative results in every instance."

THE OFFICE OF CORONER.

THE proceedings of coroners and coroners' juries furnish our newspapers with topics of almost daily complaint, but the fact that the office itself is a relic of semi-barbarism, which ought to be promptly swept away and replaced by a better system, seems scarcely to engage attention. We commend the following statements, taken from the transactions of the Nebraska State Medical Society, to the special attention of the people's municipal league and of our fellow professionals in this city:

The office of coroner, as a rule conducted as a political machine, is a source from which reproach is cast upon our profession. Many efforts have been made to secure its removal, but forms of law which have become ancient and outlived their usefulness are even more difficult of removal than medical customs. In the state of Massachusetts this office was abolished in 1877. Since that time over 13,000 cases of violent and suspicious death have been investigated by the present method. As to the satisfaction rendered by the change, I quote the following words of Theodore H. Tyndale, of the Boston bar, expressed at a recent meeting in New York. "With the abolition of this composite functionary and of the jury we gained a highly trained class of medical examiners—an office gladily accepted by the best physicians in the state—and we have opened the door to a field of detailed investigation in pathology previously unknown. We have laid the foundation of a valuable collection of observed facts as shown by the publication of our medico-legal transactions, contributed entirely by the examiners. We have attained accuracy, and we have never since the passage of the act, failed in a single prosecution for want of insufficient clearness of medical testimony." In a communication received from Dr. Samuel W. Abbott, secretary of the Massachusetts State Board of Health, dated the 3d inst., Dr. Abbott says: "I commend to your notice our excellent inquest law, of which you will find a report in the 46th Registration Report, under the head of Medical Examiners' Returns. It is a perfect success after thirteen years of effective operation. The ancient coroner with all his musty incumbrances of jury and other solemn processes was abolished in 1877, and we succeeded in examining all cases of violent and suspicious death much better and more economically without him. Our system is essentially that of continental Europe, engrafted upon a Republican basis."

THE PERFECT MAN.

IN THE process of evolution, may we not look forward in the far off ages to a perfection in man, in which the last traces of evil has been obliterated. Dr. Clevinger, looking forward to that time, pictures what he considers a perfect man as one who is suited to his particular place and environment; and as development, to its fullest extent, is possible only when environment, opportunity and ability are favorable, we will have to suppose a case in which every child is well born; that is, free from all physical and mental defects of heredity. It is the multiplicity and complexity of the nerve strands in the brain that cause intelligence, and these are developed by proper exercise and education of the senses in relation to the finer muscular movements. The learning of something to do that will benefit the world as well as self, and deep thinking thereon, and endeavoring to understand the universe as far as possible, is best calculated to develop the brain most symetrically, repress the evil and bring out all the good of which the highest type of man is capable; for goodness is but a high order of intelligence, notwithstanding its occasional absence in intellects otherwise highly developed, and its frequent presence among those whose minds are defective in other directions.

STERILIZED MILK.

PROF. LEEDS, a recognized authority on milk analysis, reports (in the *Am. Jour. of Med. Science*, June, 1890) that the retaining the temperature of milk at the boiling point for any length of time, as in sterilization, where the temperature

is held at a temperature of 212 for a length of time, converts a considerable portion of the soluble into insoluble proteids. The effect of heat, he says, where the milk is raised to a boiling point, is to entirely destroy the action of that peculiar ferment found in raw milk, which has the power of liquefying starch. As it regards milk-sugar, Dr. Leeds says, that it is completely destroyed by long continued heating of the milk, and is affected to a certain extent during the interval ordinarily allowed for milk sterilization. Dr. Davis, in the same paper, makes the assertion that while sterilized milk is undoubtedly useful in various bowel complaints, it is not on account of the change by heat of some of its important constituents sufficient to sustain life for any great length of time. In other words, each case must be as carefully individualized in the use of foods, as of drugs. In those cases where sterilized milk is desired, Dr. Leeds says it can be made sterile by rendering it alkaline with a little lime water, and bringing it up to a temperature of 155 for six minutes; or treating the alkaline solution with pancreatin at 155 followed, if not immediately used, by momentary heating to the boiling point.

THE Southern Homœopathic Medical College will open its first session of instruction in Baltimore in October. There will be a graded course of three years, with a six months' session in each year. We are glad to see from the announcement that special attention will be given to laboratory work, and that clinical teaching with ample bedside study will form special features of instruction.

THE VALUE OF THE TONGUE AS A RESPIRATOR.—It is not generally known (writes Dr. Scatliff in the *Lancet*) that nature has provided each of us with the best respirator always at hand in the tongue. For years I have personally relied on this alone, and have recommended this proceeding to many patients. When facing a cold east wind, or breathing quickly the night air, I never quite close my mouth, but purposely keep the lips a trifle parted, and at the same time curl up my tongue towards the roof of my mouth, until the tip reaches as far back as the soft palate, and I gently press the arched under surface of the tongue in some degree against the hard palate (a little practice soon makes this easy to do). The cold air then, as it enters the mouth, strikes against the under surface of the tongue, as well as the floor and sides of the mouth, and is made to pass in a somewhat circuitous manner between the sides of the tongue and the buccal mucous membrane to the pharynx, being thereby warmed in its course, so that by the time it reaches the larynx it is nicely rid of chill, and does not excite cough and catarrh. At the same time a certain quantity of air, of course, finds its way through the nasal passages to the chest, and it is obvious that a large quantity of cold air can be effectually warmed by this method of procedure than by relying on either the nose or mouth alone. That the large blood-supply of the tongue renders this organ an excellent air warmer must be obvious to all.

PROGNOSIS DANGEROUS IN ASPHYXIA.—A doctor was called to a woman who, with her child, had been suffocated. "They are both dead," he remarked, "we can do nothing." The unfortunates were removed to the hospital St. Louis, Paris, where the same statement was made. The house-doctor, however, asked permission to try artificial respiration with insufflations of oxygen, alternated with hypodermic injections of ether. Four receivers of oxygen were used, and the young doctor worked over his patients for three hours before a sign of life was perceptible. He finally succeeded in saving both patients. There was some sound sense in the saying of one of the Paris faculty: "Never admit as irremediable the death of an individual who has been asphyxiated, drowned or hanged."

SURGICAL THINNING OF A FAT MAN.—Thanks to antisepsis (writes the Paris correspondent of the *Therapeutic Gazette*), surgeons nowadays will undertake the boldest sorts of operations, and encroach more and more on the domain of therapeutics. Last month, for instance, Drs. Demars and Marx successfully began the surgical treatment of a patient affected with obesity. In good justice it should be said that all the drugs had been tried in vain, and the man had such an accumulation of fat over his abdomen that it formed a fold, hanging down and covering his thighs like an apron. Not only was walking greatly impeded, but painful erythema and intertrigo had developed to a dangerous extent. Our surgeons decided upon a radical treatment. They made on the abdomen two horizontal incisions, one over the pubis and the other two inches below the navel; the two incisions were about nineteen inches long and six inches apart near the median line, and met at an acute angle on either of the patient's sides. The operators thus removed, adhering to the skin, a strip of fatty tissue, nearly five inches thick, weighing four pounds and a half. The operation having been made under strict an-

tiseptic conditions, the wound healed by the first intention without suppurating, although there were thirty-five suture points, and the patient was three weeks later attending to his usual business. Even a second dressing of the wound never was necessary. The man has experienced so much relief that he wishes to have another operation undertaken, which this time is to be on either side of the umbilicus.

THE fact that the Standard Gas Works at 116th Street and the East River, whose foul odors have so long tainted the air of the city, have at last been ordered by the Board of Health to cork up their disease-breeding reservoir of foul smells and pestilential death-breeders, holds out encouragement that some day in the near future we may have a city with clean streets, decent sewers, model houses for the poor, pure air, and a death-rate way down in the teens. Science is quite able to effect every reform necessary to make our city the healthiest in the world if our politicians will only give it half a chance. Thanks, President Wilson, for what you have done. What next?

THE ELIMINATION BY THE STOMACH OF MORPHINE INJECTED SUBCUTANEOUSLY.—In a paper by Dr. Alt (*Berl. Klin. Woch.*, No. 40, 1889,) is found an explanation of the cause of the nausea and vomiting which in so many cases follow the subcutaneous administration of morphine, and a practical point is indicated for the relief of this complication in grave cases. The author has found that when morphine is injected subcutaneously it is eliminated through the mucous membrane of the stomach, and that this elimination commences two minutes after the injection, continues for about half an hour, and ceases at the end of fifty or sixty minutes. The nauseating effect of subcutaneous injections of morphine are attributable to this gastric elimination of the alkaloid, and the emetic effect co-exists with the elimination of the morphine by the stomach, or, at least, never precedes it. Dr. Alt finds that washing out the stomach entirely prevents the production of nausea, a point which may be of value when rebellious vomiting follows the administration of this hypnotic. The quantity of morphine which is eliminated by the gastric mucous membrane is relatively large, and may amount to even half of the total amount injected beneath the skin. The author further finds that when washing out the stomach is performed after each injection of morphine, there is produced great attenuation in the toxic effects of this alkaloid, and that then, doses which, under other circumstances, would be inevitably fatal, are found to be administered without danger. It should be mentioned that, although the author's conclusions are deduced from experimental results obtained from dogs, similar experiments made upon man sufficed to affirm the reliability of these conclusions.

THE August issue of the *Climatologist* contains a carefully prepared tabulated statement, by Prof. A. L. Loomis, of thirteen cases of pulmonary consumption treated with Koch's tuberculosis in Bellevue Hospital from Dec., 1890, to March, 1891; of these thirteen cases, seven were in the first stage (a stage of consolidation without softening), two were in the second stage (a stage of consolidation with softening), and four in the third stage (a stage of softening with excavation). Dr. Loomis's conclusions are similar to those reached by other careful observers, that while a longer and more careful experience is required for the proper and safe use of this agent than for that of any other therapeutic agent which has been given to the profession, and that while it is possible that the expectations may not be fully realized, still enough has been shown to dispel any doubt that, after the agent has passed through the siftings of careful and experienced clinicians, it will take a permanent place among the aids for the cure of pulmonary consumption.

DR. F. A. BURRALL reports ten cases of chloroform anæsthesia in which life was saved by the administration of nitrite of amyl. It may be given hypodermically or by inhalation.

THE American Medical Association proposes the establishment of a National Health Bureau with a representative in the President's Cabinet.

It seems to us that an annual congress of local boards of health at which uniformity of action could be arrived at, would be of more service. A National Board of Health is necessarily very much restricted in its work by State rights, and a Cabinet officer would, of course, meet with the same difficulty. The State of New Jersey, for instance, has passed a stringent law respecting the practice of medicine within its borders, and naturally the other States will retaliate with similar laws, all of which are an annoyance and inconvenience to the public.

What the public wants is reciprocity between the States, so that there need be no friction on account of the non-uniformity of the laws. This reciprocity will not be brought about by a National Board of Health, nor a Cabinet officer of Health,

but by a Congress of all boards of health at which, after full discussion, a definite and uniform practice may be adopted. A permanent efficient secretary, such an officer, for instance, as was the late Dr. Elisha Harris, of the Metropolitan Board of Health, of this city, need be the only salaried official, and with an Executive Committee consisting of some of the leading men in this line, an excellent service might be instituted which would combine reciprocity with uniformity of action.

Let each State and city then pass a law that its local Boards of Health shall send a representative to such a Congress as we propose, and provide for its share of the expenses upon some equitable plan.

It often happens that a practitioner of medicine is called to one of his own patients sojourning in another State. Let us suppose that a certificate of death is required, as sometimes happens. Under present rules, the local Board of Health can cause great annoyance to the friends of the deceased by refusing to accept the certificate of *their own family physician*, and the coroner is required to officiate.

The reciprocity we propose would obviate such a difficulty by the interchange of registration lists of those physicians admitted to practice in the respective localities.

WE call attention with strong commendation to the suggestion of Dr. Luther Gerlicke, in his paper on the "Relation of Physical Training to Education in General," "that the State legislature render physical education compulsory in all public schools of the State." This would be that higher education which looks to the trinity of the human body, the spiritual, mental and physical in the harmonious blending of the three in the work of progress and evolution.

THE chemists of the Board of Health make almost weekly examinations of milk and Croton water. In this way the milk supply is kept tolerably pure, for unhealthy milk is at once confiscated, but it is more difficult to deal with the Croton, as it takes a good deal of red tape to shut off the contaminations in the Croton watershed. Chemical examination shows that the water in every part of the city is contaminated. In the seventy-seven square miles examined it was found that many stables, pigpens and factories had been built over streams flowing into the reservoir. The water supplied to Newark, where typhoid fever is at present almost an epidemic, is so notoriously impure that all who can afford it purchase spring water for table use. It is no wonder that the so-called mineral waters, such as the Clysmic, are now of daily use in every household. In sailing over the crystal waters of Lake Horicon the other day, we thought what a blessing to the city if an aqueduct could be constructed, which was once contemplated, to bring its waters to our homes.

THE Homœopathic Medical and Surgical Hospital of Pittsburgh is doing, as is shown by its last report, excellent work. There were 1,634 patients treated in the hospital during the year, of which 1,284 were charity patients. The ambulance service is efficient, and the dispensary gave out over 14,000 prescriptions. The gross expenditures of the hospital for the year were about $45,000.

DR. TRESTRALL, in the *British Medical Journal*, recommends dilation instead of support of the perineum in labor, a proceeding which we think obstetricians of large experience heartily endorse. "We want," says Dr. Trestrall, "the soft parts of the outlet of the pelvis to dilate so as to allow the passage of the head without rupturing the weakest part. By supporting the perineum the force of the pains is increased and the danger of rupturing the parts also, by placing the perineum in a condition to be squeezed by the hand on one side and the head on the other. A much more common sense and an infinitely safer proceeding, in case the parts do not readily yield to the advancing head, is by gradually dilating the parts by drawing back and expanding the perineum during each pain, first with two, then with three fingers, keeping up as firm an extension as can be borne short of pain, and continued from time to time until the required amount of dilation has been obtained. By this simple proceeding the pains are strengthened; the latter part of labor is materially shortened and is far less painful, and the perineum is preserved intact."

AN ADVANTAGE for one of the most recent hypnotics, *chloralamid*, a salt composed of two parts of chloral hydrate and one part of foramide is, it is claimed, that its hypnotic action is not attended, when given in moderate doses, from fifteen to thirty grains, with any change in the blood pressure of the heart or of the respiration and temperature. From a limited experience in the use of the drug, and from the consensus of medical experience, the existence of organic heart disease not only does not contraindicate its use, but in cardiac asthma it seems to have almost a specific action producing sleep when morphine has failed. Chloralamid is not generally indicated

where the pain is severe, but insomnia existing in heart trouble and organic disease of various organs, as well as acute or chronic troubles of the lungs, typhoid fever, erysipelas and diabetes, where there is slight pain with more or less restlessness, also in chronic mania and melancholia, is relieved by this drug as promptly and perhaps with less danger than by any other hypnotic. It may be given in water, in capsules or in any alcoholic stimulant, about an hour before the effect is desired.

THERE is no class of troubles which require a more thoughtful diagnosis than the convulsions in children, especially common during the summer months. Very frequently, if the actual cause is speedily discovered, the shock to the brain is so slight as to be of little consequence. And it is just here the physician should point out to the mother or nurse some of the causes and the necessary steps for relief. A very frequent cause of convulsions is undigested food in the stomach which, if thrown up by giving a little mustard water, putting the finger down the throat, or any simple emetic, almost immediately passes away. Or perhaps the cause may be some point of irritation in the intestinal canal, worms or impacted feces, which can be remedied by an injection or a mild cathartic. The swollen and painful gums where the teeth are delayed may produce violent convulsious. The process of absorption of the gums should keep pace with the growth of the teeth, and if carefully watched by the mother, with proper attention to food and some soothing application to the parts like belladonna, hamamelis, honey or paragoric, there is but little danger of convulsions. If the restlessness and crying, point to brain irritation from reflex action, a free lancing of the gums is of course required. The experienced mother and the trained nurse are of course more or less familiar with these facts, but the faithful physician, regardless of his own pocket, should instruct the young mother in many of these points, simple if understood and acted upon in time, but oftentime fatal if neglected through want of knowledge.

FROM the statement of the secretary of the State Homœopathic Medical Society, in his announcement for the semi-annual meeting, not one-quarter of the school are members of the society, and we presume the same can be said of both the Old School and the Eclectic School of medicine. Of the enrolled members only a small minority take any interest in the transactions of the societies or attend the meetings. And yet this small minority nominate the examining board, which is to finally pass on the qualifications of students before they can receive a license to practice medicine in the State. The nominations made by the State Homœopathic Medical Society for examiners was such a farce, as was shown by our correspondent Dr. Terry, who simply stated facts as they occurred, was so subversive, in some of the names presented of the real intent of the law, so shameless in character and so evidently controlled by a clique for its own advantage, that no further evidence is needed of the folly of entrusting nominations of so important a character as for the state examining board to the state societies of the different schools of medicine. If the Regents of the State University can not be trusted with the full control of their own committees, judging from past experience they will not secure much benefit from the state societies.

DR. MIROVITCH, of Bulsk, finds in napthaline a safer and more efficient agent in expelling tapeworm than any other remedy yet employed. For an adult fifteen grains are given on an empty stomach, followed immediately by two tablespoons of castor oil. Children may take from four to eight grains followed by a tablespoon of oil. For a couple of days preceeding the drug, the patient is directed to eat freely of salted acid and spiced food.

WITH characteristic enterprise Dr. Wile, editor of the *New England Medical Monthly*, sends out a souvenir edition to celebrate the end of the first decade of the publication of that excellent journal. Our congratulations and best wishes.

WHEN a physician has spent twenty years of close application to his profession with scarely a day's relaxation, he feels the necessity for a "let up!"

Many medical men attempt to get their "outing" by a sojourn in some locality where they can "kill two birds with one stone," and unite practice with recreation, at the expense of local physicians!

Now this is not fair to either party. It does not give that complete relaxation which the tired brain requires in the first place, and on the other hand, it takes from another that which he has a right to, if he is able to get it.

The tourist season is the harvest time of the local physician, and he should be allowed to reap it if he can.

Many physicians have purchased farms in rural localities, and devote three full months of the

summer to complete rest of the brain, and come back to their duties in the city eager for the fray, restored mentally and physically, so that they are able to do much better work.

We know by experience that the farm-life for recreation is the best for those who live the other nine months in the city.

Change is what we should seek. If one lives by the sea, let him go inland, and *vice versa*.

The individual must seek that locality which best suits his temperament, and the exercise which he will take must be selected in the same manner. The change of air, of diet and of environment all combine to aid in the restoration of body and mind to a normal equilibrium.

There are delightful spots all over this vast country where one can find the desired rest, and there is great opportunity for selection. It is of the utmost importance that the locality be a congenial one—that is the first desideratum—for one must be happy in his atmosphere first, then make his surroundings of home-life to suit his tastes, keeping in view complete relaxation of the whole system.

ON ETHER DRINKING.

MR. ERNEST HART, editor of the *British Medical Journal*, has lately published some statistics and important information relative to the above subject (*Brooklyn Medical Journal*, April, 1891). The matter is of very great value, directly and indirectly. It calls attention to the internal use of a remedy which, as a powerful cardiac stimulant, has been used but little of late. The published statistics have been collected, in part personally, and also by communication with medical men, clergymen and others in the various parts of Ireland where the custom prevails.

The earliest history of the habit goes back to 1842. The greatest amount of ether used for drinking purposes was in 1876. A few years after this date there was a diminution in the consumption; but it has since increased, until at the present time the amount nearly equals that of 1876. The majority of the ether (methylated ether) comes from large English houses, being sent sometimes to wholesale Irish firms, who retail it, or directly to the smaller dealers. It is sold to the consumers in groceries, taverns and public houses, selling for two cents for two drachms. Its very small cost enables the dose to be frequently repeated. From two drachms to half an ounce is the amount usually drunk, and this is repeated from two to six times during the day, depending on the personal habits. One or two cases of confirmed drinkers are mentioned where one pint of ether was generally used, when on a debauch, in divided doses.

The amount that produces intoxication depends on the individual. The ether is drunk in a single swallow, sometimes diluted and again taken pure. The intoxicating effects are quickly produced, and quickly pass away. It is possible, therefore, as the author observes, for an habitue to become intoxicated many times in a short period.

A small dose causes a feeling of exhilaration, the drinker laughing, dancing, and being quite wild in his movements. If the small dose be not exceeded, there is no period of marked depression following the stimulation; but in larger quantities a state of stupor is frequently present, and, as the effect passes away, a feeling of weakness is left.

It will be seen, in reading the individual accounts given in the paper, that mania is a marked feature very commonly presented, the drinkers often becoming very violent.

In moderate amounts no lesions, anatomical in their nature, are produced. Of the two intoxicants, alcohol and ether, the former, probably, causes more bodily derangement.

In ether drinkers who have continuously consumed large quantities a train of nervous and circulatory disturbances is generally present. Emaciation has been observed in certain cases, and occasionally the skin is of a cyanotic hue. The more moderate drinkers generally suffer from various forms of stomach troubles. In all cases there has been observed a marked change, in the way of deterioration, in the moral character.

The relation of ether to insanity was also investigated. No satisfactory evidence of the drug being directly causative could be gathered, but physicians to certain of the insane asylums regarded it as detrimental in all cases where there was latent insanity. Death is probably not hastened in any great degree, although, by interfering with nutrition, the general health may become impaired. It is interesting to observe how common the use of ether (as an intoxicant) must be, in the districts investigated, when the public conveyances are frequently impregnated with its odor.

This curious and novel paper teaches one valuable therapeutic lesson: The effect of the drug has been shown to be rapid and transient. In its use, therefore, as a cardiac stimulant this point should be recollected, and no long intervals should go between the time of giving the various doses. Its rapid actions makes ether a safe and valuable remedy for hypodermic use in conditions of syncope.

CLINICAL VERSUS DIDACTIC INSTRUCTION.

OF THE effort now being made to substitute clinical for didactic lectures, the *N. E. Med. Monthly* says that it will, no doubt, meet with general approbation. The practitioner of to-day, looking back over his course of instruction in the college, can readily appreciate its faults and deficiencies. The didactic lecture was then as now, in favor, and however happily the subjects might have been presented and however carefully the notes might have been transcribed, there was, with all its classic accuracy, a certain cold, pedantic air about the whole thing that failed to arouse the interest of the student, and led him to think that he might just as well have read up the various subjects in his text-books at home.

Many there are to-day who feel harassed and perplexed in their medical work by reason of a system which furnishes the theory but neglects so completely the practice of medicine. The present era gives promise of becoming a thoroughly practical one. Pure learning, as such, is at a discount.

In the arts and sciences and in most learned professions, the application of knowledge to daily needs is the aim and study. The question is not, "How much do you know?" but "What can you do?" He who shows, therefore, the most thorough familiarity with applied therapeutics is destined to win the prizes—not of the schools, which are sometimes of doubtful value, but rather those of fame and success.

While in our opinion the clinical lecture is worth a half-dozen didactic ones, we do not advise the total abolition of the latter. They have their uses and should, perhaps, always hold a certain position in the college course; yet in medicine, which is a practical profession, if it is anything, the preliminary training should naturally be of a similar character, and therefore clinical lectures and investigations, demonstrations and laboratory work, together with frequent examinations, should form the greater portion of the medical curriculum.

The didactic lecture must go, and in its place must come something more practical, more tangible and better adapted to the daily needs of the general practitioner.

THE DANGERS OF COCAINE.

THE rapid accumulation of cases in which alarming symptoms followed the local application of small quantities of cocaine, together with the fact that these untoward effects are due to individual idiosyncracy, and do not invariably occur immediately, is a positive warning to the profession (says the *Med. and Surg. Rep.*) that this powerful substance should not be used for the first time without proper antidotes directly at hand and the patient kept under surveillances for at least half an hour. We will not attempt to refer to the cases published, in which ordinary therapeutic doses administered internally or subcutaneously caused symptoms similarly embarrassing.

Nearly three years ago, Satterwhite, as a result of one hundred cases of poisoning by this alkaloid, called attention to the dangers attending the use of even very small doses, and at about the same time another author, after summarizing the records of fifty cases, made a similar announcement. That this warning was well founded is evident by succeeding publications.

There seems to be no doubt that cocaine is absorbed with extraordinary rapidity, and that the stronger the solution which is locally applied the greater the danger of toxic symptoms, but whether the latter are to be attributed merely to the larger dose, or to some obscure action, is not apparent. Falk has found that the rapidity of absorption varies in the different tissues—absorption taking place most rapidly through the conjunctiva, then, in the following order: Nose, larynx, mouth and ear. It is generally conceded that a ten per cent. solution is sufficiently strong for most purposes and robbed of many of the dangers of those of greater strength.

The nature of the toxæmic symptoms varies so greatly that no rule-of-thumb-treatment can be set down; in some cases nervous and muscular excitement predominates; in others, respiration is the function most seriously affected; in others, the circulation, etc. Among the agents found use fulare nitrite of amyl, strychnine, atropine, morphine, alcohol, ammonia, digitalis, chloral, sinapisms over the heart and stomach, hot drinks and artificial respiration.

LEPROSY AND SYPHILIS.

NO MALADY has a more curious history than leprosy, and nothing in that history is of greater interest than its possible relations to syphilis, says a writer in the *International Journal of Surgery*. Even in modern times there have not been wanting men of weight who have upheld with Simon the view that the venereal disease is in some way derived from the older malady. For the following facts still remain unexplained.

Throughout the middle ages, until the end of the fourteenth century, and especially during the crusades, leprosy was endemic throughout the civilized world. No country escaped its ravages, and historians tell us that in England alone, with perhaps one-tenth of its present population, there were over five hundred houses devoted to the care

of sufferers from the malady, and called leproseries or lazar houses. Numerous religious orders, male and female, devoted themselves to the care of the unfortunate sufferers. It was universally believed to be contagious, and the leper was avoided by society and forcibly segregated. There is no doubt that this chief scourge of medieval Europe, which caused hundreds of thousands of deaths, was the same malady which we now call leprosy.

With the beginning of the fifteenth century leprosy began to abate; the notices of it in contemporary writers become fewer and fewer; the lazar houses emptied and gradually disappeared. As mysteriously as it arose leprosy vanished from amongst civilized society. So completely did it disappear that the disease itself became a myth, and was practically re-discovered in Scandinavia in the forties by Bœckh and Danielssen.

But a new and even more formidable malady arose in its place. First noticed among the soldiers in the hostile camps at Naples, the French called it "*Le Mal De Naples*," and the Italians called it "*Le Mal Française*." Finally the onus was laid upon shoulders which were unable to repudiate the burden, and this new plague was supposed to have been brought upon suffering humanity from America by the sailors of Columbus.

Syphilis spread like wildfire throughout Europe in the sixteenth century. "From the emperor on his throne," says a contemporary writer, "to the lowest civilian in Christendom, none is exempt." The low state of mortality then prevalent, together with the unhygienic and dirty habits that were universal, sufficiently explain its spread. The soil was a virgin one, and the malady raged with a virulence and a universality utterly foreign to it to-day. Gradually it wore itself out and became the comparatively mild affection that it now is.

Meantime leprosy had apparently vanished from the face of the earth. But when in the latter part of the eighteenth and the first half of the nineteenth centuries syphilis had begun to abate, leprosy reappeared. First found in obscure corners of Europe and Asia, it has gradually spread abroad again. It is spreading now as surely as syphilis is abating in a syphilized population. Whereas, twenty years ago, hebra could specify individual cases of lepra observed in this or that country by this or that observer, it is safe to assert that there is not a great city in the world to-day that does not contain its cases of leprosy. Is it possible that a malady that almost perished from inanition in an exhausted soil may start afresh when that soil has lain fallow, or has had other crops for several generations?

It does not seem probable that there is any etiological relationship between the diseases. But the history of their occurrence and prevalence forms a chapter of rare interest to the student of disease, and a promising field for future investigators.

BIBLIOGRAPHICAL.

A New Dictionary of the English Language.

It was supposed that the new edition of Webster's Dictionary, which has been thoroughly revised, the mammoth dictionary, in several volumes, now going through the *Century* press, with Worcester and Stermouth, had so exhausted the critical acumen of the best scholars in the world, that nothing more would be required in the way of analysis or definition of any part of the English language for at least a score of years. We were rather startled then, when the publishing house of Funk & Wagnall's announced in course of publication "a Standard Dictionary of the English Language," in a single volume, of 2,200 pages, of the size of Webster's new dictionary, with over 4,000 illustrations, made especially for the work; 200,000 words; 70,000 more than in any other single volume dictionary.

The distinguishing characteristics claimed are among a long list: The etymology is placed after the definition; the most common meaning is given *first*; the scientific alphabet of the American Spelling Reform Association is used in giving the *pronunciation of words*; disputed pronunciations and spellings are referable to a committee of fifty (under Prof. March) philologists in leading American, English, Canadian and Australian universities, and representative professional writers and speakers in English.

Obsolete and dialectic words and such foreign words as are rarely used in English literature are placed in a glossary in the appendix.

In the various departments are over a hundred editors, among the best known of American and English scholars, each an expert in his own department.

To advance subscribers the price will be $7, but when issued $12.

Alden's Manifold Cyclopedia. New York: John B. Alden, Publisher.

This great work is rapidly approaching completion; the fortieth and last volume will probably go to press next winter. It might be supposed that the *Cyclopedia Britannica*, on account of the great reduction in its price, would interfere with the sale of the *Manifold*. This, we think, is an error, as the facts in the *Manifold* are given with quite as much accuracy but in a much more limited and condensed manner than in the *Britanica*. The *Britanica* contains exhaustive treatises upon all important subjects and, of course, is superior to any other for a certain class of readers, but the bulky volumes and the full and thorough discussions of subjects renders it to a certain extent inconvenient, to say the least, for that daily reference in the family, which the discussion of every variety of subjects in the newspapers render necessary. And it is for family use, not alone for grown people but for children that this cyclopedia, containing reference to larger works where the subject is more fully treated, fills a place as yet unoccupied. The price of the work places it within the reach of all, and brings to the home of even the daily laborer a library of information with reference to more extended works for consultation.

Sexual Health. By Henry G. Hanchett, M. D. Revised by A. H. Laidlaw, A. M., M. D. Third edition. Philadelphia: Hahnemann Publishing House.

The author, in a small volume, has handled a delicate subject in an intelligent manner. We can hardly subscribe, however, to his almost universal *role* of circumcision.

The Pharmacology of the Newer Materia Medica. Geo. S. Davis: Detroit, Mich. Part XII.

The cloth-bound volume of these parts will be ready for delivery in September. The work is a third larger than was anticipated, and forms an important addition to our literature on this important subject.

Practical Intestinal Surgery. By F. B. Robinson, M. D.

An interesting and valuable book. The subject is treated in a concise yet comprehensive manner. It is one of the Physicians' Leisure Library Series. Published by Parke, Davis & Co. Price 25 cents. We recommend it to our readers.

We very cordially welcome to the field of medical journalism *The Climatologist*, a monthly journal of medicine, devoted to the relation of Climate, Mineral Springs, Diet, Preventive Medicine, Race, Occupation, Life Insurance and Sanitary Science. Edited by John A. Keating, M. D., F. A. Packard, M. D. and C. F. Gardiner, M. D. Philadelphia: W. B. Saunders, Publisher. The first issue is very interesting.

The Traveler's Ready Reference Guide is a consolidation of the "Knickerbocker Guide" and the "Appleton Railway and Steam Navigation Guide," is published monthly and contains map and latest time schedules of all railroads, rates of fares between principal cities, list of first-class hotels, and a compilation of general, useful information to travelers and tourists; in short, it is a *Guide that guides.*

CORRESPONDENCE.

THE KEELEY CURE FOR INEBRIETY—CONFLICTING OPINIONS.

To the Editors of the NEW YORK MEDICAL TIMES:

The following is extracted from an article on "Modern Methods of Treating Inebriety," by H. R. Chamberlain, which appears in the July number of the *Chautauquan:*

"The people of Illinois and Iowa have become more or less familiar within a year or two with the testing by an Illinois physician of bi-chloride of gold as a specific in the treatment of dipsomania. The experiment has met with such apparent success in the treatment of five thousand cases, that some influential secular papers have demanded the adoption of the remedy by public institutions which admit inebriates. There was held at Des Moines, Iowa, a few weeks ago, one of the most remarkable re-unions ever assembled. It was a re-union of about one hundred ex-drunkards, who have formed a State League. The president, Robert Harris, editor of the *Missouri Valley Times*, said, in a speech: 'Missouri Valley, the city in which I live, is not a very bad city in the drinking line—just an average prohibition city; but since I made my pilgrimage to Dwight, I have sent thirty-two of the boys to that place or to Des Moines to be cured . . . and they are to-day as sober men as there are in Iowa. The State should take this matter in hand. The liquor *habitué* is afflicted with a disease worse than insanity. He has a chance for his life in this cure, and why should not the State furnish the institute? . . . There would be no need of prohibition laws, for when a man has gone through the treatment he ceases buying liquor, and if all drinkers will cease buying the saloons will soon close.'

"The new treatment consists in the administration of bi-chloride of gold in solution hypodermically and through the stomach for a period of about three weeks. Its effect in destroying the appetite for narcotics is said to be immediate. It is the practice to allow the patients to drink all the pure whiskey they want while under treatment; but none of them call for liquor after the third or fourth day. It is voluntarily discarded, and the appetite, it is said, never returns. The reports submitted show only five per cent. of failures or relapses in five thousand cases treated during ten years. The evidence is worthy of most careful investigation by the best scientific minds, to the end that society may not miss the fullest benefits of what may be most valuable discovery."

In a very different strain wrote, last April, the editor of that lively little journal, *The Doctor*, under the heading "An Opium Cure Fraud." After denouncing "Leslie E. Keeley, M. D.," as "the greatest scamp of all those who trade upon the credulity of the public with nostrums for the cure of the alcohol and narcotic habits," and as "the most dangerous of all quacks, the quack that is backed up by a medical diploma," he said of his "patent narcotic annihilator," "the double chloride of gold," that it "should be a well-known combination of the chloride of gold and the chloride of sodium," only the qualities which Keeley claims for it are not recognized by competent authorities. This, Keeley explains with quackish shrewdness, is because the drug as commonly used is dangerous, but *he* has discovered a method of preparation which enables him to administer it universally, not only without harm to the patient, but with the full measure of its extraordinary power to quell the cravings for narcotics and stimulants which he asserts it possesses. As to this, the most effective reply is that Keeley's remedy has been analyzed and this is what it was reported to contain: Chloride of ammonium, used in some nervous disorders; aloïn, laxative; compound tincture of cinchona, tonic and water. About seventy-five per cent. of the mixture was alcohol. Not a trace of chloride of gold could be found. The stuff is no more of a specific for the opium habit than that other quack remedy, Dr. Haines' golden specific, is a cure for drunkenness. They are both frauds.

The method which it is said that Keeley pursues with alcoholics at his "institution" at Dwight, Illinois, is to hypodermically inject cocaine and strychnine twice a day, and he may begin with morphine; naturally, patients have little desire for alcohol while this treatment is in progress. His bi-chloride of gold, as he calls it, has no value except as a mild tonic.

If these statements are well founded, it is difficult to see how the good effects of the treatment could last so long as, according to the latest reports, they certainly appear to do. Would it not be well to collect and publish some reliable evidence on this point from former patients of Keeley, many of whom must be readily accessible, as he is now practising within the limits of your city? The foregoing charges, it must be admitted, wear a *prima facie* aspect of strong probability. But then why is it that the bubble has not collapsed long ago? For humanity's sake, let us have the truth as soon as possible!

GEO. L. FREEMAN.

THE MIDDLETOWN STATISTICS.

To the Editors of the NEW YORK MEDICAL TIMES:

Rather more than a twelvemonth has elapsed since Superintendent Talcott, of the Middletown State Hospital for the Insane, sent forth those remarkable statistics over which the homœopathic journals have been singing peans of victory. By the figures he presented it was made to appear that from the year 1883 to 1890 inclusive, the average of recoveries in the above-named hospital was 48.89 per cent. against an average of 29.48 per cent. in the three Old School hospitals of the state, while the percentage of deaths was 6.13 in the Old School hospitals as against 4.6 in the homœopathic. And now come the New York State Commissioners of Lunacy and, referring to the Middletown Hospital, state officially that: "One of the state hospitals has incorrectly proclaimed a much higher ratio of recoveries and a much lower ratio of deaths than those of any other hospital, simply by estimating the percentage of recoveries on the number discharged and the percentage of deaths on the whole number treated, methods which it need scarcely be said are calculated to show, on the one hand, the highest ratio of recoveries, and, on the other hand, to show the lowest ratio of deaths; whereas in the other institutions these percentages are, very properly, estimated on the average daily population."

Dr. Talcott's attention having been called to the matter, he insists that his method of reckoning is correct, and then furnishes another table calculated by himself, in which it appears that *upon the basis adopted in other hospitals*, the figures show in the three Old School hospitals an average of recoveries of 19.48 per cent., in the Homœopathic

Hospital 25.82 per cent., or a difference in favor of homœopathy of 3.34 per cent., instead of 20.41 per cent., and a death loss of 10.70 per cent. in the Old School hospitals as against one of 6.51 per cent. in the homœopathic, or a net gain for homœopathy of 4.19 per cent. The same table shows that between the Middletown and the Utica Hospitals the difference in recoveries is only forty-nine hundredths of one per cent., and that of deaths 2.73 per cent. Upon this amended showing, the *Clinical Reporter* (homœopathic) comments as follows: "The balance remains upon the right side, it is true—distinctly so as to the percentage of deaths—a fact that may be due to the dangerous drugs prescribed by the regulars. The actual facts shown are gratifying enough in themselves, when the character of the ailments treated is taken into account—but there is such a 'come down' when one realizes that the claim made must now be admitted to have been more than six times too large, that the shouts of victory of a few months ago come back now with a sort of derisive echo. Not only that, for we can not but feel that Dr. Talcott's corrected statistics themselves will not now be everywhere received with that implicit confidence which they would otherwise have received.

"Some timid ones, and perhaps some others, who think more of the name of a school than of its substantial honor, will blame us for speaking of this. If the truth of homœopathy is to be established by juggling with figures, they are right. We maintain, however, that if, as we believe, homœopathy is medical truth, then the plain, uncolored, unvarnished truth is what we need and all we need to establish its superiority. It is not necessary that we should raise the dead or cure incurables to prove the superiority of a system, and to pretend to do so savors of—no, is—quackery pure and simple.

"The reliability of the majority of statistics of recoveries and deaths, is problematical in many cases, and yet, when carefully and honestly made from sufficiently extensive data, they furnish the best, if not the only, test of the relative merits of methods of treatment. Such being the fact, misrepresentations and exaggerations must be sedulously guarded against by statisticians and frowned down by physicians everywhere. It is therefore to be regretted, to say the least, from the standpoint of scientific truth as well as from that of policy, that Dr. Talcott should have seemed to make claims for homœopathy which his revised figures show to have been exaggerated. Let us have 'the truth, the whole truth and nothing but the truth,' gentleman—and let us not wait to tell it until some one else has first said it for us."

Excellent advice! But what good will it do, so long as warring "schools," with their separate institutions, continue to exist, and the dear people can be persuaded, by "misrepresentations and exaggerations," into patronizing and endowing them? E. D. N.

Messrs. Editors:

It won't do, of course, to be always harping on T. F. Allen, but don't you think some things he said at the Intern. Hom. Congress were a little remarkable? "The proving of hom. medicines has just commenced." It must go on through the centuries, and even then there will be "an inexhaustible mine of medicines to prove!" Well may he say he "stands aghast in the presence of this vast subject!" Then he boasts of the work he has begun in the way of experimenting with paid provers, the "first fruits" of which are "facts discovered" in relation to aletris and cedron. These are: One young woman took immense doses of the former without experiencing a single symptom; another had lymphatic enlargements in her breast while taking cedron. And these are important discoveries, worthy to be thus pompously announced before such a gathering! No thought, apparently, of any confirmation in the way of *control experiments!*

Did you notice what the last *Med. Era* says, under the heading "Materia Medica Pura?" "Some present [at Atlantic City] seemed not to fully appreciate that drug pathogenesy is a *science* and that it should be dealt with accordingly. In his work of building up the science of drug pathogenesy the homœopathist should, for the time being, entirely ignore his experiences as a practitioner of homœopathy. To attempt in the *practice* of homœopathy to verify a fact in the *science* of drug pathogenesy is, to say the least, extremely hazardous. Our growth in a knowledge of materia medica pura is slow, but it will be satisfactory only as it results from strictly scientific work." This is evidently aimed at T. F. A., for the latter, at the congress, laid down the law as follows, with regard to "individual symptoms:" "Let us retain these spmptoms tentatively; let us index them, and *if we find that on appeal to the sick they stand us in good service let us use them—let us hold on to them.*"

I don't believe that Allen, in his *professorial* character, ever got such a slap in the face as this before—and from a former admirer, too! Yours truly,

G. L. FREEMAN.

HOW IS THIS, SUPERINTENDENT TALCOTT?

The following is taken from a notice in the *Sanitarian* for April, 1891: "Heretofore one of the state hospitals (the Middletown State Homœopathic) has incorrectly proclaimed a much higher ratio of recoveries and a much lower ratio of deaths than those of any other hospital, simply by estimating the percentage of recoveries on the number discharged and the percentage of deaths on the whole number treated, methods which, it need scarcely be said, are calculated to show, on the one hand, the highest ratio of cures, and, on the other, the lowest rate of deaths; whereas, in the other institutions these percentages are very properly estimated on the average daily population."

The annual report of the State Commission in Lunacy for 1890, puts the percentage of recoveries among the patients in the Utica Hospital at 19.53, in the Buffalo Hospital 29.19, *in the Middletown Hospital 16.16*, in the Poughkeepsie Hospital 18, and in the Asylum for the Insane Criminals 8.96.

Dr. Frank Kraft, Professor of Materia Medica, has withdrawn from the Cleveland Homœopathic Hospital College.

OBITUARY.

DR. AUSTIN WELLS HOLDEN.

AUSTIN WELLS HOLDEN, A. M., M. D., died at his home in Glen's Falls, N. Y., on July 19th, 1891, in the seventy-third year of his age. Dr. Holden was a man who commanded the highest respect of all who knew him, both in and out of the profession. He was a man of studious habits, a good writer and an active and faithful worker wherever he was interested. The members of the Medical Board of the Ward's Island Hospital will remember him for his faithfulness and integrity while he was their chief of Staff, and the various societies of which he was a member have lost a most efficient and faithful associate.

In the locality where he resided, he was most active in the good works which his hand was ever ready to do, and his memory will be held very dear to a large circle of friends and acquaintances.

He graduated at the Albany Medical College in 1848, in 1863 was made Acting Assistant Surgeon U. S. Vols., and was President of the Local Board of Pension Examiners for many years. His literary ambition resulted in a history of Queensbury, which was his greatest effort. His life was one to be emulated, and his memory should be held in that remembrance which its character warrants.

TRANSLATIONS, GLEANINGS, ETC.

RETROSPECTIVE THERAPEUTICS.

By Alfred K. Hills.

"Nutrolactis" for Cystitis.—Dr. C. A. Bryce writes as follows in the *Southern Clinic*, September, 1890: Accidentally we have had our attention called to a preparation which bids fair to prove of great value in cystitis. Sometime since we had occasion to give a patient some "nutrolactis" for improving the milk supply, and found it possessed decided advantages as a remedy in relieving cystitis, as well as its galactagogue properties, which latter it undoubtedly possesses in a very marked degree. We have since exhibited this remedy in several severe cases of cystitis, one being especially chronic and severe, the result has been uniformly relief and finally cure of the trouble. We are so thoroughly satisfied of its value in this direction, that we intend to rely upon it in future in preference to many other agents formerly used. We are not prepared to say whether some one of the ingredients found in "nutrolactis" is the special agent doing the good, or whether the effect is due to the combination as it is presented to the profession, but it is this combination that has given us the results.

We would suggest that possibly it may prove valuable in gonorrhœa and urethral irritability generally.

The Electric Lamp for Neuralgia.—A correspondent of the *Medical Record* writes that he has several times obtained much relief when suffering from facial neuralgia, by applying to his face an incandescent electric light. He suggests that the lamp could also be used in poulticing, laying it over a flaxseed or other form of poultice, thus securing constant heat.

Warm Water in the Treatment of Insomnia.—Dr. Altorfer (*Journal De Medical De Paris*) recommends a plan of producing the sedative effects of a warm bath, which can easily be carried out. He recommends that the loins be wrapped in linen cloths which have been dipped in lukewarm water. These cloths are covered with a water-proof sheet so as to prevent evaporation. The whole is retained by a flannel bandage so that all loss of heat is obviated. The author claims to have obtained surprisingly good results from this simple method of treatment.

Aluminium in Diphtheria.—Dr. E. H. Dickenshied, Spinnerstown, Pa., in a paper read before the Lehigh Valley Medical Association, states that aluminium was first used by his father a decade ago, in a case of what he supposed to be hopeless diphtheria, as a disinfectant. The patient recovered, and since then 257 diphtheritic patients have been treated with but two deaths. The remedy is used in solution as follows:

Aluminium chloride	3 8
Aluminium bromide	3 4
Boiling water	3 64

M. S. Place over a water bath until dissolved.

Its local action on the diphtheritic membrane is to loosen it around the edge and to dissolve it rapidly so as to give the edge a very ragged appearance. Its astringent action reduces throat congestion. The solution is also used, in the proportion of one to seven of water, as a gargle or in an atomizer, and at the same time the patient takes from five to ten drops.

Arsenicum for Epithelioma of the Penis.—Dr. W. E. Green writes in the *Medical Era*, September, 1890: While visiting Hot Spings, in October, 1889, I was asked by my friend, Dr. S. M. Work (Old School), to see a case of epithelioma of the penis, and to give my opinion as to the advisability of amputating the organ. The disease was of several months' standing, and had been diagnosticated and treated as epithelioma by several eminent physicians. Dr. Work had excised the prepuce, the original seat of the trouble, and had given the patient a thorough course of anti-syphilitic treatment, but the disease reappeared at the point of cicatricial union, and was rapidly spreading in every direction. I concurred in the diagnosis, asked the doctor to try the arsenical treatment, as recommended by Dr. Mitchell, for one month, and if at the end of that time there was improvement, I advised that the organ be removed entire.

Upon my return home I sent him one ounce of the 2x trit. of arsenicum for local application, and one ounce of the 3x trit. for internal use, with a full explanation of the manner of using them.

I saw Dr. Work to-day, July 7th, 1890, and he told me that within two months the patient had entirely recovered, and had remained well ever since. He further stated that he had used the treatment in several cases of lupus, and that it had also proved curative in that intractable disease.

Hot Water in Acne of the Face (Frederick J. Leviseur, M. D., *Med. Rec.*, September 13, 1890).—Hot water applied twice or three times a day for about five minutes is one of the most reliable local remedies which we possess for the treatment of acne of the face. The water should be very hot, so hot, in fact, that it can hardly be borne by the patient. Care should, of course, be taken not to scald the face, but if the water is warm only, instead of really hot, more harm than good will be produced. The face should not be washed, rubbed, or bathed with the hot water, as is so frequently done, but a small portion of the diseased area of the face should be soaked with it for a very short time only. The heat of the water which is brought in contact with the skin, is deeply dissipated for a moment and causes an intense but transitory local hyperemia. This is exactly what we want to produce. If the hot water is allowed to act on the skin for too long a time, say more than a minute, or if the application is renewed at too short intervals, an acute inflammatory condition is added to the disease already existing. It is sufficient to go over the affected parts twice in one sitting, and the entire operation need not take more than three to five minutes. A handkerchief or a piece of soft linen is commonly used to convey the hot water to the face. I use for this purpose a very simple glass holder, which I have constructed. This little instrument, which I have named "thermophor," is made by G. Tiemann & Co., N. Y. Not only plain, but also medicated hot water may be used. I have had excellent results from the use of the "lotio alba," to which resorcin is added according to the following formula: ℞. Zinc. sulf., potass. sulfuret. aa ʒ j; aq. rosarum, ℥ iv. Dissolve each of the ingredients in half the water, misce et adde resorcini, ʒ j. S. Lotion. Shake well. This lotion is to be used hot at night and cold in the morning.

Cannabis Indica in Gastric Affections.—Prof. Germain Sée (*Bull. Med.*) considers cannabis indica, administered in the form of an extract, to be an ideal gastric sedative in most affections of the stomach, other than organic, associated with pain. When, however, the condition is associated with hyper-acidity large doses of bicarbonate of sodium, given three or four hours after a meal, assist in obviating the symptoms. It is, however, useless in atonic and dilated conditions of the stomach. He points out that gastric digestion is facilitated by the drug, and very great relief is afforded to the collateral symptoms, such as vertigo, headaches, palpitation and dyspnœa. It is free from the inconveniences that attend the exhibition of narcotics, such as opium, chloral, etc., but its use does not preclude resort to the ordinary curative treatment, both dietetic and medicinal. The drug should preferably be employed in the form of a crude extract, in doses, three times daily, of a third of a grain. The active principles extracted from the plant failed to yield the same satisfactory results.

Ledum Palustre for Rhus Poisoning.—Dr. J. W. Hawley writes in the *Medical Advance*, May, 1890, that for more

than twenty years he has invariably prescribed ledum palustre for rhus poisoning, and believes it to be a true antidote; if administered when the eruption first appears all symptoms will disappear within forty-eight hours, unless it be a slight desquamation, which may follow.

Pineapple for Tapeworm.—Dr. F. H. Lutterloh, of Anthony, N. M., writes to the *Medical World* as follows: In 1875, in the State of Vera Cruz, Mexico, I was called to see a Miss L., about ten years old, who had passed several segments of tapeworm about six inches in length, some of which I saw. I at once prescribed that she eat half of a large ripe pineapple. She forthwith did so, finding it a most agreeable medicine; in the course of twelve hours she had an evacuation, in which was about six feet of worm, including the head, and thus a final cure was effected, as I knew her intimately for nine years after, and no more tapeworm.

Peroxide of Hydrogen in the Treatment of Diphtheria (Dickey, *Ann. of Gyn. and Ped.*).—Peroxide of hydrogen was discovered by Thenard, in 1818, though it remained for Dr. Richardson to call attention to its medical properties in 1855. It is a colorless, tasteless liquid, and when applied to a diseased membrane causes little or no pain, and I know of nothing in the whole materia medica that will dissolve the diphtheritic membrane so quickly and thoroughly, and yet leave the healthy mucous membrane intact. When applied to pus or diseased tissue oxygen is set free, which appears in the shape of gas bubbles, and a frothy effervescing mass is to be seen; this is kept up for two or three minutes. I am in the habit of diluting it twenty-five per cent. (although it can be used full strength) and applying it with an atomizer. This can be repeated until effervescence ceases, when the membrane will be found to have practically disappeared, leaving a whitish surface. When the membrane reappears it is again made use of. If the nose is invaded, it can be applied there with equal satisfaction. I am in the habit of having all the watery secretions from the nostrils absorbed with blotting paper rolled into conical shape and gently inserted into the nose, or by absorbent cotton wrapped on the end of a small stick, either of which is burned as soon as used. The peroxide is then applied. The keeping of the nostrils as free from secretions and membranes as possible is a matter of the utmost importance, and one too frequently overlooked. The poison is more rapidly absorbed from here than from any portion of the mucous tract, being very liberally supplied with lymphatics. In children old enough to use a gargle, I have them use chloral hydrate in glycerine and water soon after using the hydrogen peroxide. This serves a threefold purpose; it is an antiseptic, a local sedative and an antispasmodic. In children not old enough to use a gargle, it may be applied with the De Vilbiss atomizer. At the same time bichloride of mercury, tincture of the chloride of iron, with or without chlorate of potassium, or such other remedies as may suit the judgment of the individual prescriber, or be applicable to the case in hand, may be used. For my own part, I prefer the bichloride. Coupled with this should be given good, digestible food at regular intervals, of which milk should form the basis, and such stimulants, from time to time, as the individual case may demand. The constitutional treatment is not less important than the local, and consequently this must be attended to from the outset. When the temperature exceeds 103⅕° F. I have the entire body sponged with tepid water as often as may be necessary to bring it below this point. Pellets of ice internally will allay thirst and relieve very materially the turgid condition of the blood-vessels, and should not be omitted. Ice may also be applied to the throat in a rubber bag or a bladder, relieving greatly the inflamed glands. This, briefly outlined, is the treatment in the more malignant forms of diphtheria which has given me the best results, and I attribute them to the use of the peroxide of hydrogen.

Creasote in the Treatment of Hyperemesis.—In the *Berliner Klin. Wochenschrift*, Dec. 29, 1890, Dr. Peter Kaatzer gives a report of a case in which a woman was thought to be wasting from phthisis. Her sputum contained only a few bacilli, and it came out by and by that the woman was pregnant, and was vomiting after every meal. Kaatzer prescribed creasote, both for the stomach trouble and the phthisis. After taking two doses, the patient ceased to vomit and rapidly recovered. Kaatzer does not know why the remedy did good. The formula used was the following:

℞ Creasoti puriss. ..... M xxx.
Alcoholis. ..... f ʒ i.
Tinct. Gentianæ. ..... f ʒ iiss.
Ext. Caffeæ. ..... ʒ iiss.
Aq. Destill. ..... f ʒ iii.
M. Sig.—Shake well. Tablespoonful in milk.

Electricity in the Treatment of Sciatica and other Neuralgias.—Mordhorst (*Therapeutische Monatsheft*) has employed for the past four years a special method of treating sciatica, for which he claims the best results. In cases of neuritis—most of these cases belong to that class—it is well to begin with a hot bath of from fifteen minutes to one hour's duration, followed by rest in bed of at least one hour, after which electric massage is to be used after the author's method. This consists of the application of the cathodal electrode having a surface area of at least 100 square cm. to the sciatic notch, while a revolving cylinder connected with the anode is passed down the limb along the course of the nerves. Deep pressure is made when the electrode is drawn downward, but it should only touch the skin lightly when returned, to prevent a break in the current. The author says that stronger currents from five to ten milliampéres can be used in this way, with a correspondingly rapid absorption of inflammatory exudate.

Of thirty-six cases of sciatica treated in this way thirty recovered and six were improved. One case was cured in eight days, but the average length of treatment was from three to six weeks. Of thirteen other neuralgias, ten were cured and three improved.

Borax in the Treatment of Epilepsy.—Borax was proposed for the first time by C. Folsom in the treatment of epilepsy in 1881. Growers reported four cases treated with this remedy, out of which in three a cure was obtained. Dr. Dijoud (*El Siglo Medico*, 1913, 1890,) has tried it in twenty-five chronic epileptic patients in which the bromides had been used either without success or with no satisfactory results. The duration of the treatment was from four to seven months. The dose varied from one to six grammes daily. He entirely cured one, and notably relieved all the others, except six. From this it is apparent that borax is able to diminish—in a great number of cases which do not yield to the bromides—the frequency of the epileptic attacks. The dose may, without inconvenience, be carried up to six grammes per day, yet one should be careful to commence with one to two grammes daily, and progressively increase the dose. The following is a convenient form for a one-to-four grammes dose:

℞ Sodii biborat. pulverizat 1-4.00
Syrup corticis aurant. 30.00
Aquae destillat. 100.00
Sufficient for one day.

Sig. To be taken in two doses: One in the morning, and the other in the evening.

When the dose exceeds four grammes per day, one gramme of glycerine should be added for every gramme of borax over four grammes.

In the prolonged use of the remedy Dr. Dijoud recommends the following formula:

℞ Sodii biborat. pulverizat. 10.00
Glycerin. pur. 6.00
Syrup corticis aurant. 94.00
Sig. To be taken by the spoonful.

The Diuretic Action of Calomel in Renal Dropsy.—Fleiner, in a recent article, calls attention to the action of calomel in renal dropsy. The diuretic action of the remedy in cardiac dropsy has been generally recognized, although no special indications have been put forth for its use, yet as a diuretic in renal dropsy it has been rejected by the German clinicians as Nothnagel, Penzoldt, v. Ziemssen and others. The writer then communicates a case in support of its use in dropsy with kidney diseases. The patient was in an advanced stage of Bright's disease with a dropsy which threatened to end his life. Twenty cgms. (three grs.) of calomel three times daily continued for eight days at one time and nine days another, with an interval of three weeks between caused the dropsy twice entirely to disappear. The remedy had no deleterious action upon the patient, but on the contrary kept him in a relatively good condition for several weeks.

The writer is, therefore, of the opinion that calomel is not to be entirely rejected in the treatment of renal dropsy, which now is quite generally the case, but that it should be employed where the usual heart tonics, diuretics and diaphoretics are inactive and energetic treatment is indicated. Digitalis or strophanthus may be simultaneously used.

The renal secretion, which before had been scanty, of a high specific gravity and containing a relatively large number of various cylinders quickly increased in amount with diminishing of the specific gravity and on continuing the remedy the cylinders diminished, especially as the diuretic action began to decrease.—*Hygiea*, April, No. 4, 1891.—F. H. P.

Treatment of Spasm of the Glottis.—A German writer, Hesch, would emphasize the frequency of spasm of the glottis in children below twenty-one months of age, of poor families, badly nourished and especially in those children who are bottle-fed. Rickets is also a cause of the disease and at the same time a coëffect of the same causes. He has found but little utility in using remedies during the attack, and would place more confidence in plenty of fresh air and removing all cumbersome coverings. Injections of chloral per rectum have never helped him any in treating the attack. More good has been obtained from the use of evacuating injections. Prophylaxis, based upon dietetic regulations, is above all other things most important. The child should receive exclusively liquid food. Soups made with meat, broths or milk, thinned with coffee, were the only foods which he allowed his patients. Coffee and milk twice a day; soup three to four times and no more. This diet must be followed six to eight weeks, until the suspicious tone of the voice is changed. Then one may commence to add a little carefully ground meat to the soup.—*Gazzetta Medica di Roma*, No. 5, 1891.—F. H. P.

The Effect of Tobacco-Smoke on Meat.—Cases of poisoning due to meat which seemed thoroughly wholesome have sometimes occurred, and have remained unexplained. In the *Revue D'Hygiene* M. Bourrier, inspector of meat for Paris, describes his experiments with meat impregnated with tobacco-smoke. Some thin slices of beef were exposed for a considerable time to the fumes of tobacco, and afterward offered to a dog which had been deprived of food for twelve hours. The dog, after smelling the meat, refused to eat it. Some of the meat was then cut into small pieces, and concealed within bread. This the dog ate with avidity, but in twenty minutes commenced to display the most distressing symptoms, and soon died in great agony. All sorts of meat, both raw and cooked, some grilled, roasted, and boiled, were exposed to tobacco-smoke and then given to animals, and in all cases produced symptoms of acute poisoning. Even the process of boiling could not extract from the meat the nicotine poison. Fresh-killed meat is more readily impregnated, and stands in order of susceptibility as follows: pork, veal, rabbit, poultry, beef, mutton, horse. The effect also varies considerably according to the quality of the tobacco. All these experiments would seem to denote that great care should be taken not to allow smoking where foods, especially moist foods, such as meats, fats, and certain fruits, are exposed.

Hysteric Pseudo-Tabes.—Pitres describes ten cases of this disease, all in adults varying from twenty to forty-three years of age and of a nervous predisposition. The chief causes seem to be great overexertion or psychic overexcitement. The disease requires much time for its development.

The most prominent symptoms were an ataxic gait, swaying on closing the eyes, lancinating pains, girdle and spinal pain. Paræsthesiæ and partial hyperæsthesiæ, as for example, of the soles of the feet; as well as anæsthesiæ were often found to be present.

It is diagnosed from actual tabes by presence of the patellar reflex and pupillary reaction. The ocular symptoms of tabes are also absent. The urinary symptoms, polyuria, gastralgia, vomiting attacks and spontaneous, subcutaneous ecchymoses may, however, be present.—*Norsk Mag. f. Salgevidesk*, 7, 1891.—F. H. P.

Antidote to Strychnine.—Bromide of potassium, in doses of rather more than a drachm every half hour, is a most effectual remedy in cases of poisoning by strychnia. The physiological effects of strychnia and bromides upon the anterior columns of the spinal cord are directly antagonistic.

Bronchitis Produced by the Vapors of Picric Acid.—A peculiar form of bronchitis produced by the vapors of picric acid is described by Regnault and Sarlet (*Annales D'Hygiene*, March, 1891). The malady is characterized by paroxysms of dyspnea, frequency of respirations and of cough, and the absence of a glairy expectoration at the end of the crisis. The paroxysms occur during the day and also during the night. Death is rarely produced. In a fatal case observed by the authors, the patient's death was due to an intercurrent malady: "la grippe." A chemical analysis showed the presence of picric acid in the urine, the blood and the liver. The patient poisoned by the picric acid vapors exhibited a condition of anemia and a yellowish coloration of the skin, of the hairs on the surface of the body and of the parts, especially, most exposed to the toxic emanations. The diagnosis of the peculiar dyspnea and asthma was easily made, especially after the analysis of the urine, which usually contained picric acid.

A Simple Method of Dislodging Impacted Gall-Stones.—Lawson Tait describes the following simple procedure, which he has used in one case successfully. It consists in passing a fine needle through the wall of the intestine from below, that is, from the empty part of the intestine into the gall-stone. The stone is thus easily and immediately split up into fragments and passes readily along the intestine, and the grave complication of opening the intestine is rendered unnecessary. The operation is, in fact, little more than an exploratory incision.

Treatment of Iodism.—According to Drs. Buchmann and Malachkowski, to combat iodism we should render the fluids of the body alkaline. For this purpose they employ from seven to ten grammes of the bicarbonate of soda. They have used this medication since 1887, with constant success.

MISCELLANY.

—A correspondent of the *Medical and Surgical Reporter* tells about an exceedingly interesting adventure which happened to a Chicago physician during the congress at Berlin. The Illinois man passed over the Linden late at night reflecting upon the glory in store for his native city. Suddenly a suspicious looking individual hustled by, closely touching the doctor, the latter with the ingenuity of a Western man, felt for his watch, and missing it, unhesitatingly began the pursuit of the robber. The suspicious individual fled through the Brandenburg gate into the Thiergarten, the American doctor in close pursuit, loudly crying, "Put up that watch!" Near the Victory column the robber was caught by the doctor, and compelled to deliver the watch, after which he was released. The Chicago man returned to his hotel proud of himself and of his native city and country. But lo! On the table he beheld his watch, which he had forgotten on leaving the hotel. Next morning all the papers published the story of a robbery in the Thiergarten. A French doctor, they said, had been pursued by a burly robber, attacked and robbed of his valuable watch.

—The Legislature of Missouri wants to limit the fee of doctors to one dollar per visit, and fifty cents for office consultation.

—Sir J. C. Browne has been lecturing on the "Brain," and gives the following averages of weight; the Scotch, 50 ounces; the English, 49 ounces; the German, 48.3 ounces; the French, 47.9 ounces.

—From an editorial notice in the *Eclectic Medical Journal* for April, we learn that "A $400,000 Homœopathic-Eclectic hospital, in a city of 70,000 in central Connecticut, needs several good physicians to take hold of the eclectic wards of the proposed hospital." This will probably be the only existing institution of its kind, although Eclectic-Homœopathic establishments, as our readers know, are plentiful enough!

—A new remedy for skin disease is a continual bath, the patient eating, drinking and sleeping there until cured. One patient has been kept in such a bath for 885 days. He is tied up always at night to prevent him from slipping so as to be drowned. The palms and soles become much shrivelled, but the rest of the skin is unchanged. The water is kept at 100° F.

—Illustrative of the dangers of furnishing alcohol in large amounts to large gatherings, was the banquet given by Berlin to the Tenth International Medical Congress. The correspondent of the Philadelphia *Medical and Surgical Reporter*, says: I regret to say that the bigger the man the more he was inebriated. Upon a professor whose name is a household word over the medical world, artificial respiration was practiced for almost an hour. Another professor who has revolutionized one of the most important of medical branches, had a bad cut in his head from a fall. A French physician renowned for fighting temperance, was too drunk to spell his own name. Two men were seen hugging each other, who are known as irreconcilable antagonists in science, one a leader of German bacteriologists, the other a Paris professor who does not believe in bacilli.

—The didactic lecture of medical teaching must go.

—Prof. Von Nussbaum, of Munich, died October 31st, aged sixty-one.

—The *Medical Record* wisely says that athletics are not needed by brain workers, and if carried to excess will shorten rather than lengthen life.

—Prof. Gluck has been using an antiseptic cement, to bring about direct coaptation of resected bones, with excellent results.

—One startling innovation which was suggested at the meeting of the International Congress at Berlin was that of Dr. Gluck, and it consisted in the substitution of joints made of ivory for those which had been removed for disease. The doctor showed the practicability by a number of cases in which he had operated and which he exhibited to the congress.

—The primary battery has been applied to the propulsion of invalid chairs in England. A strong chair, weighing about two hundred pounds, is fitted with a battery at the back of the seat, and can be speeded up to about five miles an hour. As it is calculated that the cost of maintenance of the battery does not exceed four cents an hour, and as no renewal would be required during an ordinary day's use, the economy of this mode of propulsion for invalids is obvious.

—As a curiosity of diagnostication, the Chinese method of determining the state of the fetus is worthy of attention. "When the face of the mother is red and the tongue green, the fetus is dead. If the face is green and the tongue red, the infant is living but the mother will die. When the face and the tongue of the mother are both green, the child and mother will both die at the same time." This is rather puzzling to obstetricians of the white race; perhaps the chromatogenetic effect of pregnancy on the skin of the Chinese woman is different from that on her white sisters.

—Brazil has a law for the medical examination of persons about to marry to determine their fitness. It is a sanitary measure that is found to be necessary to stop the transmission of scrofula, which at one time threatened to destroy the strength of the people.

—Dr. Fantom, of Marseilles, is in the habit of delivering women during hypnotic sleep. He has done this for some time with almost uniform success. Almost his only failure seems to have been due to a misunderstanding on the part of the patient; the suggestion to have no pain was interpreted by her as an order to have no pains; and uterine contractions accordingly ceased for four hours.

—We learn that Dr. Grant Bey, of Cairo, has been prosecuting an interesting research for the Smithsonian Institute at Washington, which has resulted in his discovery that the ancient Egyptians of the earliest dynasties used a smokeless light, equal in intensity to our electric light, for lighting their temples and for enabling them to execute the fine work in the interior of their dark tombs.

—The best time to get shoes fitted to the feet, is the latter part of the day. The feet then are at their maximum of size and sensitiveness.

—In Chicago the moment a new baby appears in the "upper circles" engraved cards are sent out announcing the important arrival. To prevent delay in this announcement two sets of cards are prepared beforehand, one bearing a feminine name, the other a masculine.

—Boil equal parts of urine with liquor potass., to which is added a pinch of sub-nitrate of bismuth. If sugar is present the powder turns brown or black.

—Impermeable glue (*Revue Industrielle*) may be made by soaking ordinary glue in water until it softens, and removing it before it has lost its primitive form. After this, dissolve it in linseed oil over a slow fire until it is brought to the consistency of a jelly. This glue may be used for joining any kind of material. In addition to strength and hardness it has the advantage of resisting the action of water.

—All incandescent electric lights should be shaded for desk workers. Since they have been generally introduced, it has been found that where the rays fall direct upon the eyes of newspaper writers and desk workers, there has been a great increase of complaints of dimness of sight and inflammatory affections of the eyes.